DEVELOPMENT FINANCING 2000

Financing and Providing Global Public Goods

Expectations and Prospects

Study 2001:2

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Ministry for Foreign Affairs
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Financing and Providing Global Public Goods

Expectations and Prospects

Prepared for the Ministry for Foreign Affairs
Sweden

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on behalf of:

IDS

Institute of Development Studies
Sussex

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Foreword

A couple of years back the Swedish Ministry for Foreign Affairs initiated the project Development Financing 2000 with a view to increase awareness, knowledge and international commitment to a strong, effective and well-funded multilateral system for development. Previous studies within the project have focused on the roles and financing needs of the Multilateral Development Banks and the UN development agencies as parts of the multilateral system.

Globalisation in its many aspects has led to opportunities and challenges that require unprecedented efforts in international cooperation. Viewing global concerns - such as HIV/AIDS, peace and security, climate change, biodiversity and financial stability - through the lens of global public goods may offer new insights on how to bring all the relevant actors and financial sources together in a more efficient and coherent international system.

With this independent study we want to bring more clarity into the policy and financing aspects of the much debated concept of global public goods and point to implications and choices for the institutional framework.

Gun-Britt Andersson
State Secretary for Development Cooperation, Migration and Asylum Policy

Preface

This report is the product of an intense period of work of several weeks by a team under the direction of Keith Bezanson, Director of the Institute of Development Studies (IDS) at Sussex University. Francisco Sagasti, IDS Senior Associate, was the principal researcher and author of the report. Peter Newell, IDS fellow, and Silvia Charpentier, Geoffrey Oldham and Sandy Thomas, IDS senior associates, were in charge of the case studies. Rachel Sabates-Wheeler, IDS fellow, contributed to the main report, and Ursula Casabonne, Fernando Prada and Jill Clements provided research assistance and helped with the preparation of the analytical reviews.

The authors are grateful to Andreas Ershammar and Pernilla Johansson of the Swedish Ministry for Foreign Affairs for their constant support and many valuable suggestions. Uma Lele, Mats Karlsson, Natasha Landell-Mills, Gonzalo Castro, Julian Fleet, Lennarth Hjelmåker and Pierre Schori provided most useful comments on the draft report at two events in Stockholm and New York.

Contents

List of Boxes

List of Figures

List of Tables

Executive summary

Introduction

This study is part of the 'Development Financing 2000' initiative of Sweden's Ministry for Foreign Affairs. Other studies that form part of the initiative include reports on financing the United Nations system, on the future of the multilateral development banks (MDBs) and on transboundary water management policies. Among other things, these previous studies drew attention to the growing mismatch between, on the one hand, new demands for international public goods as a consequence of globalisation, and the existing system of institutions, including financing instruments, on the other. An important and logical extension is the present report and supporting case studies, which focus specifically on financial mechanisms for the provision of global public goods. The views expressed in the study are those of the authors and do not necessarily reflect the veiws of the Swedish Ministry for Foreign Affairs.

The notion of global public goods[1] has recently assumed centre stage in the international agendas of policy-makers. At the same time, global public goods have become a subject of extensive new academic study and scholarship. This study is an attempt to bridge the two by examining academic discussions on global public goods in the context of actual and ongoing policy processes. Such a bridging effort seems especially important at this time, for two reasons. First, political and social pressures are mounting for the financing of a wide range of new initiatives in the name of global public goods. Second, there is currently considerable disagreement on the value and potential of an international public goods approach to addressing global concerns. While some scholars and policy-makers indicate considerable enthusiasm over the concept and its potential value, others have serious reservations. Indeed, there are many who have expressed alarm about claims being made in the name of global goods and about what they view as the 'fuzziness' of the concept of a global public good, especially when it is inscribed into policy processes.

The central concern of this report, therefore, is of a practical nature and centres on whether the concept of global public goods can advance *thought and action on common concerns that affect a large portion of humanity*. This raises a number of challenges for clarity on three interrelated sets of factors associated with the growing attention paid to global public goods.

The first of these factors involves the very idea of a public good. The concept of a 'public good' originates in the academic discipline of economics, where it is accorded an exacting technical definition. There are major difficulties in extending it beyond its narrow economic scope and applying it at a global level. The second factor is globalisation, a force which many claim is generating an ever greater need for global public goods. Yet, globalisation is a paradoxical phenomenon of numerous definitions and few tight conceptual boundaries. The third factor is the system of international development co-operation that has been placed at the centre of demands to ensure the provision of global public goods. This system finds itself under greater stress today than at any time since its launch over 50 years ago.

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[1] Much of the impetus for this derives from the seminal 1999 study, *Global Public Goods: Development Cooperation in the 21st Century*, produced under the auspices of the United Nations Development Programme (UNDP).

Each of these factors has its own share of conceptual imprecision and ambiguity, contradictory interpretations and competing viewpoints, and each is in rapid evolution. Their convergence makes attempts at developing integrative conceptual frameworks problematic and risky. This is further compounded by the rapid pace of intellectual production and of policy shifts in relation to issues such as biodiversity, HIV/AIDS, peace and security, and climate change, among others, which bear directly on the conception of global public goods and their financing.

These difficulties and risks may be formidable, but for policy-makers, they make all the more urgent the need for a conceptual framework that integrates the key factors affecting the definition, delivery and consumption of global public goods. Viewed positively, the potential payoffs from such a framework, particularly in terms of better and more effective policies to address common concerns, may be substantial. Viewed negatively, the lack of conceptual clarity could lead to misguided policies and involve high opportunity costs. This study presents an attempt to construct an appropriate conceptual framework. It adopts a systems approach and builds on analytical contributions from economics, international relations and political science to focus on the design of an idealised 'international public goods delivery system'. Among other things, the conceptual framework makes clear that it is not possible to escape values, preferences, interests, asymmetrical knowledge and power relations in defining global public goods and in arranging for their provision. It also makes clear that, without policy processes that take all these factors into consideration, declarations that something is a global public good are essentially empty rhetoric.

Public goods, globalisation and development assistance

Public goods: basic concepts

In a 1954 article, Paul Samuelson introduced *non-excludability* and *non-rivalry* as the essential characteristics that differentiate a private good from a 'pure' public good. *Non-excludability* means that it is either impossible or prohibitively costly to exclude those who do not pay for the good from consuming it. Once the good has been produced, its benefits, or harm, accrue to all. The *non-rivalry* property implies that any one person's consumption of the public good has no effect on the amount of it available for others. The corresponding concept of the *public bad* refers to goods that have a negative utility – air pollution, water contamination, civil strife, financial instability, spread of disease – which the community would benefit from preventing or reducing. Public bads are the other side of the same public goods coin.

Additional concepts closely linked to the notion of public goods are *externalities* and *free-riding*. *Externalities*, or third-party effects, involve situations where the costs or benefits of any particular good or action are not reflected in the price of the good itself. The cost of impacts is transferred from the actors directly responsible to others. The incentives to correct this do not exist as long as the externalities remain external. When the cost of the externality is effectively attributed to the agent that generates it, that externality has been 'internalised.' Ultimately, the motivation to invest in the provision of public goods arises from the desire to encourage positive externalities, or to correct for negative ones. *Free-riding* is directly associated with the non-rival and non-excludable character of public goods, and refers to a lack of incentives on the part of users to finance their supply.

Public goods elicit patterns of behaviour that, from the individual agent's viewpoint, are quite rational. Yet from a collective viewpoint, such as that of a local community, a nation or humanity as a whole, the result is sub-optimal and can be disastrous.

Since Samuelson's initial exposition, there has been increasing criticism of the strictly economic definitions and notions of public goods. Samuelson himself maintained that in real life, public goods are rarely 'pure' and that what he had postulated was in fact an ideal theoretical concept that could not strictly be applied to real policy matters. Ultimately, he insisted, public goods were determined by qualitative ethical factors and depended upon political consensus. In effect, it is the fact that most public goods are 'impure' rather than 'pure' that makes *collective action* (government intervention, agreements between private agents or a combination of both) the focal point for the intellectual and policy concerns regarding public goods.

Globalisation and public goods

The reason usually given for the increasing centrality of global public goods in international policy debates is globalisation. Globalisation is a deeply paradoxical phenomenon that puts all human beings in contact with each other but simultaneously maintains deep fissures between different groups of countries and between peoples within countries, and exempts few from an interdependent vulnerability to global forces. This is described as the *fractured global order* – global, but not integrated.

One way of conceptualising the fractured order is in terms of three closely interconnected and partially overlapping domains (the global, the networks and the local), each of which has its own specific features and ways of interacting with the other two. The *domain of the global* comprises the impacts of actions by individual agents (including the exchange of symbols and intangible goods), which through aggregation and amplification affect the majority of the world's population and even future generations. The *domain of the networks* consists of the multiple channels and nodes that interconnect social groups all over the world and that establish a tangled web of overlapping and intertwined network of networks. The *domain of the local* is constituted by those human activities anchored in time and space, and which comprise the actual production, exchange and consumption of tangible goods and services by organisations and social groups of all kinds.

The fractured order resulting from globalisation involves the transference of political power and modifies the boundaries and the relative importance of the three domains. Many concerns, issues, decisions and activities that were previously national or local in nature have now acquired a wider scope and have moved beyond the exclusive control of the nation state. Although many of these 'cross-border externalities' are not new (war and disease have spread internationally for thousands of years), the speed and broad reach of their contagion effects have changed their character in a fundamental way. As the actions of one or more agents (government, corporations, associations and even individuals) create costs or benefits for other agents not party to the transaction and located far beyond national, institutional and organisational boundaries – and even across generations – narrowly construed domestic and local policy responses are clearly insufficient.

Thus, to address effectively the cross-border characteristics of these externalities, will

require increasingly cooperative actions by multiple actors widely spread throughout the world. Because cooperative actions on this basis are likely to involve significant degrees of non-rivalry and non-excludability, the concept of global public goods is being applied increasingly in analysing and articulating policy responses to the new challenges of this fractured global order.

The emphasis on the 'global' character of certain public goods, however, must not lose sight of the fact that their actual provision is ultimately rooted in the domain of the local – in specific activities at the national and local levels. This lack of capacity to engage in actions that contribute to the supply of global public goods does not allow governments, organisations and individuals to take advantage of and consume the global public goods.

Development assistance and international public goods

The decade of the 1990s saw a stagnation of Official Development Assistance (ODA) in nominal terms and a decline in real terms. A huge increase in private flows also occurred, but this was concentrated in a handful of developing countries. Against the background of these shifts, and particularly the volatility of private flows, the financing needs of developing countries in general, and those of poor countries in particular, remain very high and vastly exceed available resource flows.

As a consequence, the last decade of the twentieth century has witnessed many efforts at reversing downward ODA trends. Global public goods have become a major part of these efforts. Many established development organisations interpret global public goods as providing a new rationale for development assistance and as a possible basis for mobilising 'additional' financing. The basic proposition is that by focussing significant increases in financing on global public goods, richer countries would be acting in their own direct interest (i.e. if you/we do this, you/we will enjoy major direct benefits). This appeal to 'enlightened self-interest' is aimed principally at domestic constituencies in developed countries and is quite distinct from rationales based on appeals to charity or ethical responsibility. The advocacy of a global public good approach to development assistance, therefore, is directly linked in the minds of many to 'additionality' (i.e. more financing for development) and the possible reversal of a decade of declining ODA.

A conceptual framework for examining the provision and financing of global public goods

The confusion and ambiguities that have become evident in discussions linking global public goods and development cooperation indicate the need for greater clarity and an agreed conceptual framework. If this is to be achieved, a first problem is to define what exactly is a global public good, before determining how to provide it. As indicated, the theory of public goods offers only very limited assistance in arriving at meaningful definitions that are also useful to policy choices. Second, the collective action problems that are inherent to public goods in general apply to global public goods to an even larger extent. Even if there is general agreement that the potential gains from international concerted action are great, there is no supranational government authority to devise and impose solutions as the norm at the national level (e.g. taxation, regulation, market creation). Third, the range of spill-overs across countries can vary significantly. This begs the question of how 'international' a public good must be before being considered

as a global public good. It is obvious that the broader the range of spill-overs the more 'global' a public good would be. But the boundaries between international and global public goods are quite diffuse and these terms are frequently used interchangeably. Finally, regardless of how 'global' public goods are they have to ultimately be produced, utilised or provided by some individual or agent in a specific location. For this reason, it is necessary to differentiate between the *core component* of the delivery system, which should be taken care of by the international community, from the *complementary* activities that are the primary responsibility of national and local entities, for its provision and existence.

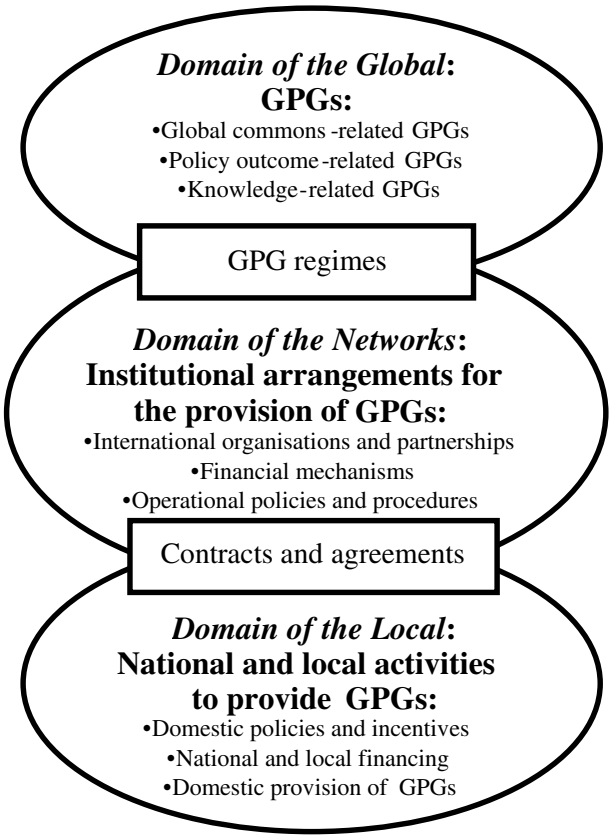
As a consequence, the transition from acknowledging a good, service or outcome as desirable to declaring that it is a 'global public good' is anything but straightforward or automatic. It is heavily influenced by public awareness and political decisions, and requires collective action at the level of the international community (which includes not only national governments, but also private corporations and civil society organisations). It also begs the question of 'desirable for whom?' Declaring something to be a global public good has meaning only when embedded in a political process that assures its delivery.

An idealised 'international public goods delivery system'

One way to conceptualise the requirements outlined in the foregoing section and to integrate the various issues that have been raised in discussions about global public goods, is to articulate what may be defined as an idealised 'international public goods delivery system'. Such an idealised construct can help to separate the elements that constitute the core component of a global public good delivery system in a more restricted sense from those that relate to the complementary regional, national and local activities involved in its production, delivery and consumption, placing all of them in a common interconnected framework.

The components of an idealised international public goods delivery system can be placed in the three domains of the fractured global order. As shown in Figure 1, global public goods – whether related to the global commons, to global policy outcomes or global knowledge – belong in the *domain of the global*. The host of institutional arrangements, including international organisations and partnerships, supranational financial mechanisms, and operational policies and procedures that are in charge of ensuring that the global public good is made available belong in the *domain of the networks*. The multiplicity of national and local activities related to the actual production and consumption of global public goods, which include domestic policies and incentives, national and local financial mechanisms, and the activities of government agencies, private firms, civil society organisations and individuals, belong in the *domain of the local*. The conventions, treaties and protocols that formalise agreements for the provision of a global public good – also known as global public good regimes – mediate between the upper two domains. Contracts, agreements and other lower level legal instruments mediate between the lower two domains.

Figure 1 Global public goods in a fractured global order



It follows from this conceptualisation of an idealised system that attempts to define and arrange for the provision of global public goods cannot avoid issues of asymmetrical knowledge, capacities for benefit, differences in values and power relationships. It follows equally that any claim that something is a global public good is merely exhortation, unless the essential elements to deal with these issues, that is, the delivery system, have been established. Seven such elements are suggested and are summarised in Figure 2. These are:

1 *Knowledge, public awareness and political decision*. Declaring that something is a global public good depends primarily on knowledge about its characteristics and effects, the extent of public awareness and pressures to provide the global public good, and on the political decision that providing the global public good merits concerted actions by the international community.
2 *Global public goods regimes*. Regimes are a key concept in the literature on international relations with obvious application to global public goods. Regimes have been defined as the 'arrangements peculiar to substantive issue-areas in international relations that

are characterised by the condition of complex interdependence.' The regimes in an idealised international public goods delivery system would include the conventions, treaties, protocols, agreements and other legal instruments resulting from negotiations in an issue-area. However, not all regimes require complex inter-governmental negotiations and may be a result of the gradual evolution of practices, implicit agreements and *ad-hoc* arrangements between the various parties involved in a particular issue-area. The nature of the interactions between the parties interested in its provision will influence the results of such negotiations.

3 *International organisations and partnerships*. Intergovernmental organisations, specialised secretariats or partnerships between public, private and civil society organisations are required to interpret, administer, monitor, enforce and evaluate the provisions specified in the agreements that give rise to the global public goods regime.

4 *Financing mechanisms*. The provision of international and global public goods requires that special resources be allocated to finance the activities involved in their delivery.[2] A whole host of activities, from raising public awareness and negotiating international public goods regimes, to the performance of specific tasks at the local level that actually provide the public good, need to be considered in the design of financial mechanisms.

5 *Operational policies and procedures*. These refer to requirements for the consistent and effective application of the principles and norms of global public good regimes (i.e. the policies, decision-making procedures, regulations, codes and other rules internal to the organisations and financing mechanisms).

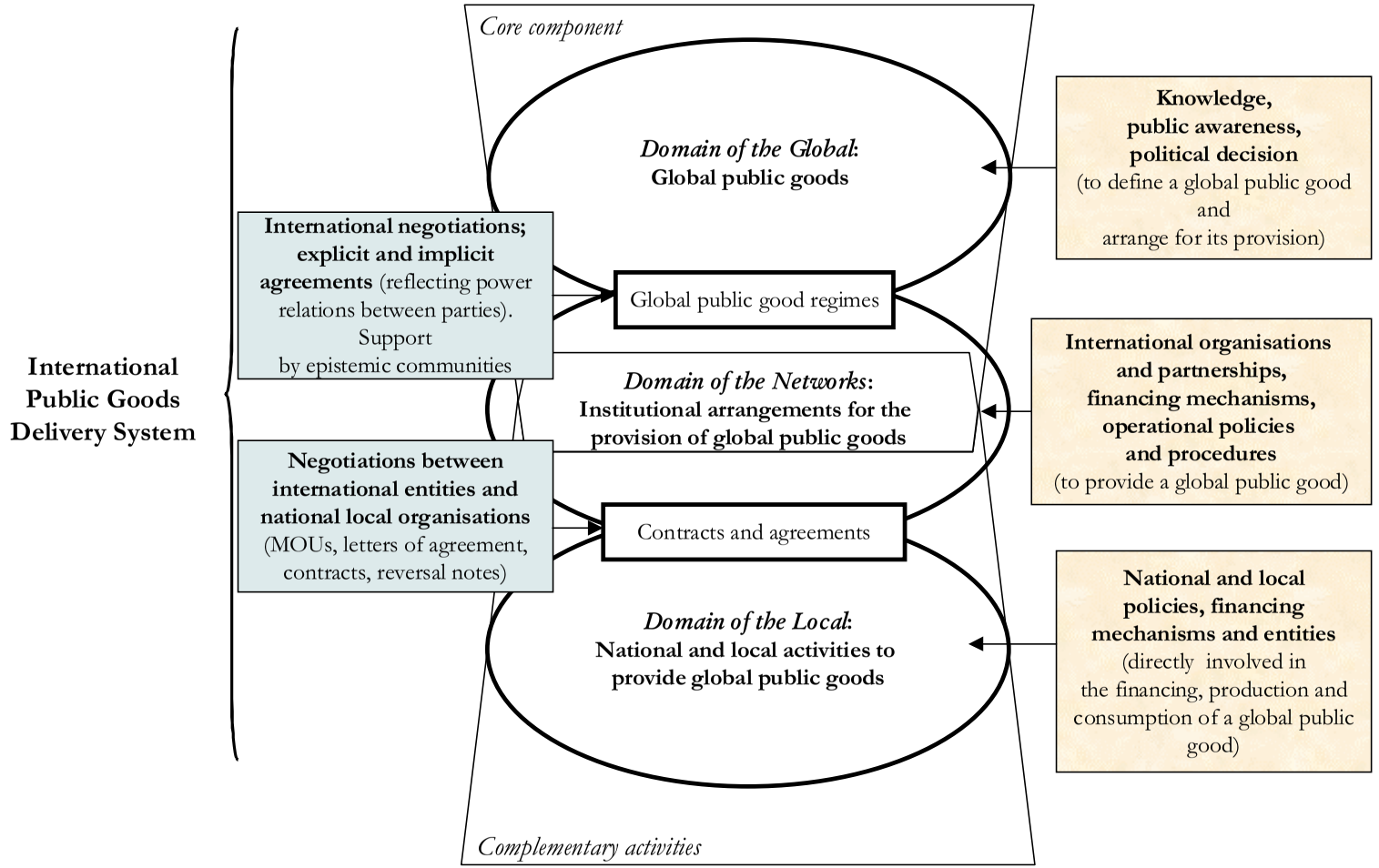
6 *Agreements and contracts*. Mediating between entities placed in the domains of the networks and of the local in an international public goods delivery system, are many types of lower level legal instruments. These specify the terms of reference, obligations and rights of the national and local entities involved in the actual production and consumption of a global public good.

7 *Capabilities and arrangements for the inclusion of national and local entities in the provision and consumption of a global public good*. The last component of an international public goods delivery system refers to the government agencies, private firms, civil society organisations and individuals that are actually involved in activities that produce or consume a global public good.

An idealised international public goods delivery system would be made up of all of the components indicated above, extending from the core component (the upper trapeze in Figure 2) to the complementary regional, national and local activities linked to the provision and consumption of the good (the lower trapeze in Figure 2). Yet, as Figure 2 suggests, the way in which these two sets of activities relate to each other is perhaps the most crucial aspect in establishing arrangements for the provision of international public goods. The main question is *how far to go down along the continuum from global to local activities in defining what constitutes the core element of the global public good delivery*

[2] There is a major issue and considerable controversy over applying financial resources whose purpose is development assistance (i.e. ODA) to the provision of global public goods. It is highly questionable that ODA should be applied to the provision of global public goods that benefit developed countries at least as much as developing countries. *Additional* resources are required, above and beyond ODA, for this purpose.

Figure 2 An international public goods delivery system



system? The answer to this question will, in turn, determine which international organisations and programmes should be involved in their provision and, most importantly, *how the provision of the global public good should be financed.*

A decision could be made to separate the core component from the complementary activities of the international public goods delivery system, and to limit the financing arrangements associated with the global public good just to the core component (for example, to produce and guarantee the availability of HIV/AIDS drugs at a reasonable price). This would imply that regional, national and local entities would have to make their own preparations to finance and organise the complementary activities, although this would have to be done in close coordination with the entities in charge of the core component. Alternatively, a decision may be made that the core component of the global public good should incorporate the organisation and financing of the means to deliver it all the way down to the national and local levels (for example, to actually provide treatment for HIV/AIDS infected persons). In this case, the 'complementary activities' in the delivery system would overlap with and, in effect, would become part of the 'core component'; they would thus have to be included in the financial arrangements associated with it.

The advantages of using the conceptual framework of an 'idealised international public goods delivery system' should now be apparent. It identifies the elements that must be in place for a global public good to be defined, produced and consumed, and invites, therefore, assessment of what is missing in the case of a particular global public good and how far down in the international public goods delivery system it will be necessary to go in order to arrange for its provision. This conceptual framework also underscores the point that there is no way of escaping values, interests and power relations in defining what is a global public good; that the knowledge of epistemic communities is critical to underpin a decision and to establish global public good regimes; that institutions and partnerships, financing mechanisms, and operational policies and procedures are required at the international level to facilitate the production of the global public good; and that all of the preceding arrangements would be useless without the identification and involvement of national and local entities that will be in charge of actually producing and consuming the global public good.

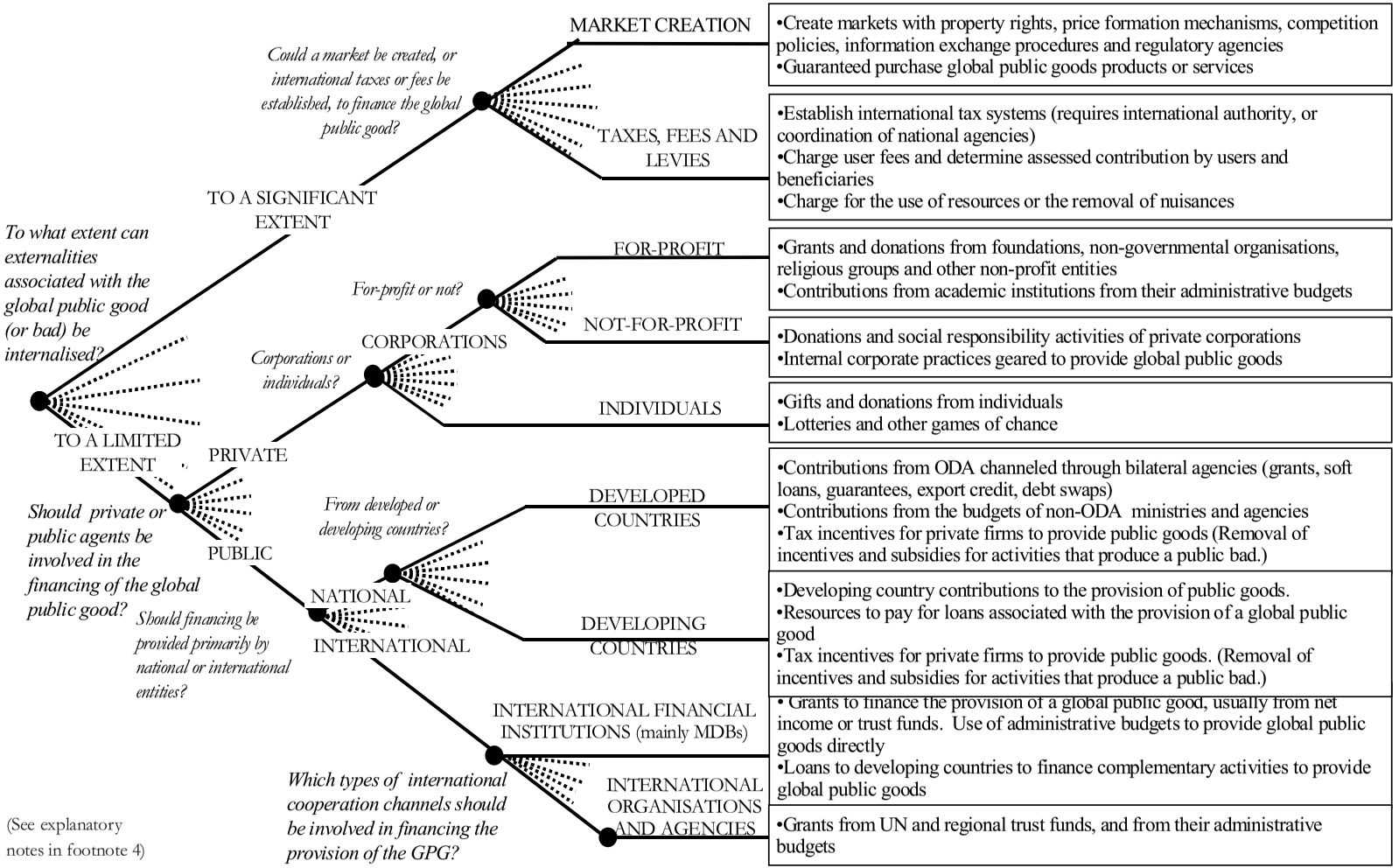
Exploring financing options for the provision of global public goods

Even with all the problems of definition and of obtaining accurate figures, there is no doubt that increased resources have been allocated over the last decade of the twentieth century to what have become broadly considered as global public goods. The World Bank estimates that, during the mid-1990s, approximately 30 per cent of the US$55 billion of total Official Development Assistance was allocated directly and indirectly to global public goods.[3] The Bank also draws attention to the fact that this is an allocation trend that appears to be increasing.

This trend has produced expressions of deep concern to the effect that this amounts to a net transfer of resources *away* from developing countries. For this reason and because

[3] The direct component was estimated at about US$5 billion with another US$11 billion allocated to the complementary activities that are necessary to produce and consume the global public good.

Figure 3 A framework for exploring financing options for the provision of global public goods



(See explanatory notes in footnote 4)

of the multiplicity of channels that could be involved in an international public goods delivery system, a scheme for the systematic exploration of financing options is needed. Figure 3 suggests a framework to begin such exploration. It consists of a logical sequence of questions to guide examination of the range of financial mechanisms that have been used in practice or have been proposed. The framework applies primarily to the financing of global public goods (the upper trapeze in Figure 2), and to a lesser extent to the regional, national and local activities linked to the provision of the global public good (the lower trapeze in Figure 2).

As indicated by the dotted lines at each node in Figure 3,[4] choices are not necessarily 'either' – 'or', and combinations of the two extreme branches in different degrees are possible, leading to a mixture of financing mechanisms. Partnerships between different types of institutions would usually lead to such combinations of financing mechanisms, for they involve intergovernmental agencies, private sector corporations, foundations, academic institutions, international non-governmental organisations, national government agencies and the like.

Mechanisms to finance global public goods

There are many categories of financing mechanisms for the provision of international and global public goods. Table 1 divides these into four groupings: users and beneficiaries; private sources; public sources; and finally, various combinations that usually take the form of partnerships.

Table 1 Financing mechanisms for global public goods

Internalising externalities	Market creation or strengthening	
	Taxes, fees and levies	
Private sources	Corporations (for profit)	
	Corporations (not for profit)	
	Individuals	
Public sources	National	Developed country sources
		Developing country sources
	International	International financial institutions
		International organisations and agencies
Partnerships	Combination of various different sources	

[4] *Explanatory Notes to Figure 3*: (a) Framework applies mainly to financing of the core component of an international public good (less so to complementary activities) and the questions should be adapted to each specific global good and distinct case. (b) Choices are not necessarily 'either-or'. Financing mechanisms could involve partnerships. Combinations of private and public financing may be required even in cases of market mechanisms, fees and taxes.

Payments by users and beneficiaries associated with internalising externalities

These are associated with internalising externalities and they take the form of market mechanisms and of international taxes and fees. There are two ways in which producers and consumers of an international or global public good could be made to finance directly its provision: by creating a market for it, and by levying taxes, fees and charges.

Market creation and strengthening to ensure provision of global public goods would require a range of institutional arrangements, including the assignment of property rights,[5] allocation of quotas, putting in place mechanisms for information exchange, procedures to set prices and the establishment of regulatory agencies. When markets are created to ensure the provision of global public goods, incentives are accorded to private agents. For example, the idea underlying the establishment of carbon trading permits is to establish market incentives for the provision of a global public good. It is noteworthy, however, that the effective and efficient operation of such mechanisms demand transparency and effective regulatory frameworks, which, in turn, require public financing. This is a critical factor in considering financing options for global public goods. Essentially, even where markets can provide, or be created to provide, global public goods, a certain amount of public financing is also required to ensure that private market mechanisms work well.

Taxes, fees and levies are another way in which externalities associated with global public goods could be internalised. A number of such mechanisms have been proposed to finance the provision of public goods related to international and global commons, global policy outcomes and knowledge. While taxes, fees and levies could be used to finance the provision of global public goods directly associated with the specific source of revenue (for example, revenue from carbon taxes used to finance energy conservation and programmes to prevent climate change), they could also be employed to finance the provision of global public goods in general, as well as the national and local activities related to their production and consumption.

Taxes are an important potential source of finance for the provision of international and global public goods. Their application has been a subject of discussion during the preparations for the meeting on Financing for Development that is scheduled to take place in Mexico in 2002. While some of the discussion has centred on whether an 'international tax system' could be created, in practice there is no necessary requirement to create a supranational tax authority. It could be enough to collect any such tax at the national level through existing revenue collection agencies, and to coordinate the way in which the revenues would be used at the national level and transferred to some international institution. More generally, however, current enthusiasm for the vast theoretical potential of international taxation to finance global public goods should be viewed against the fact that many of these proposals have been around at least since the Brandt Report of 1980.[6] The political feasibility of international

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[5] Property rights would comprise ownership rights, such as land titles and water rights, use rights (licenses, concessions, usufruct certificates, access rights) and development rights, such as the right to engage in bioprospecting and in natural resource exploration).

[6] Brandt specifically raised the possibility of revenues for development purposes from taxes on international trade, particularly trade in arms, crude oil, durable luxury goods, exploitation of mineral deposits and the use of the international commons, among others.

taxes may be no greater today than when Brandt made his recommendations over 20 years ago.

User fees and levies have also been proposed as a means to generate resources to finance international and global public goods. Most such proposals refer to very small fees for the use of the global commons,[7] and would have a moderate to limited revenue generation potential in comparison with widespread international taxation (which implies large collection and administration costs).

Private resources for financing global public goods

Private resources for financing global public goods derive from three broad sources: not-for-profit corporations, profit-making firms and individual persons. In relative terms, these are modest sources of financial support for international and global public goods, and here follows a brief sketch of all three.

Not-for-profit corporations include independent foundations, non-governmental or civil society organisations, and academic institutions. Private independent foundations usually have endowments that generate income from investment, which is used to award grants (grant-making foundations) or to run programmes (operating foundations). Grant-making foundations finance non-governmental organisations, academic institutions, community associations and individuals to carry out specific activities linked to the provision of public goods. Operating foundations engage directly in the production of such goods.

Large *international non-governmental organisations* (NGOs) obtain funds from a variety of sources and may have operational budgets that run in the tens of millions of dollars, though most NGO budgets are considerably smaller. In many cases, these have become major sources of financing for global public goods. The World Wildlife Fund (WWF, now the World Wide Fund for Nature) and Nature Conservancy, for example, has become a principal source of finance of global biodiversity conservation.

Academic institutions, including research centres, policy-oriented think tanks and the statistics departments of various international and national institutions, also contribute to the provision of global public goods through research on international issues, the compilation and processing of information and statistical data, the dissemination of knowledge and the spread of best practices, and the creation and consolidation of epistemic communities. Academic institutions obtain financing from the budgets of private and public universities, from research contracts, from the regular budgets of bilateral and multilateral agencies, from private donations and government grants.

For-profit corporations giving programmes, are established and administered directly by profit-making firms (and do not require establishing a separate endowment). The cost of running these programmes is considered part of the operating expenses of the company and usually funded from pre-tax income. These programmes may provide gifts, award prizes, contribute through price discounts and give paid leave for employees to

[7] For example, the proposals include a surcharge on airline tickets to reduce the use of congested flight lanes, changes for maritime transport to curb ocean pollution, user fees for activities in Antarctica to reduce their environmental impact, parking fees for satellites using the geostationary orbit to avoid congestion, and charges for the utilisation of the geomagnetic spectrum.

engage in pro-bono activities. Although there is evidence that corporate giving programmes are on the increase, they are not usually directed to the provision of global public goods and the magnitude of financial resources involved is very small, relative to other sources of financing for public goods in general. In addition, some large transnational corporations, such as Shell International and British Petroleum have modified their internal operating procedures to contribute to the reduction of greenhouse emissions, thus helping to provide the global public good of climate change mitigation.

Individual contributions are contributions made by individual persons to the provision of international and global public goods, which take the form of direct donations, large gifts by wealthy individuals, earmarking a portion of payments for services (e.g. credit card purchases) and purchasing lottery tickets. Small donations to non-governmental organisations and civil society associations, either of permanent character (Red Cross, Greenpeace, Amnesty International), or of temporary nature (fund raising campaigns, pledges from viewers and listeners in TV and radio concerts), constitute a financing mechanism that may, in exceptional cases, add up to significant amounts.

Public resources for financing international and global public goods

This encompasses funds provided by government agencies in developed and developing countries, tax incentives that imply governments foregoing revenues, and funds from international financial institutions and other international organisations. These resources, obtained from government revenues, are channelled through *national* mechanisms which include donor country contributions (from ODA and non-ODA ministries), budget allocations by developing country governments, tax incentives (foregone public revenue), and from the removal of incentives and subsidies for activities that produce public bads. Public resources are also channelled through *international* institutions and organisations such as the international financial institutions (IFIs), which include the IMF and the multilateral development banks and a variety of international funds, and also through international and regional organisations and agencies.

Four different mechanisms are used by developed countries to finance global public goods: Official Development Assistance (ODA) through bilateral agencies; debt swaps and debt reduction operations; contributions from the budgets of non-ODA ministries and agencies; and tax incentives for private firms to encourage the provision of a public good (including the removal of subsidies for activities that produce global public bads). Global public good financing through bilateral agencies is obtained from general tax revenues at the national level and allocated as development cooperation to agreed global public goods. Debt swaps involve legal and financial instruments that transform debt obligations into resources for the provision of global public goods, and often discount the original face value of the debt of developing countries. A recent innovation to debt swaps involves combining debt relief with the explicit redirecting of public expenditures towards activities associated with the provision of an international or global public good (e.g. increased investment in biodiversity conservation by Costa Rica, in return for debt relief).

Budget allocations by non-ODA ministries and agencies are another way for developed countries to finance the provision of international and global public goods. An agreed international system of criteria and norms to track and report on such allocations (along

the lines of the DAC system for ODA expenditures) is a clear requirement if the vexing question of additionality of financing for global public goods is to be addressed. Few countries currently have established procedures to allow this.

The granting by developed countries of t*ax incentives for private firms* for the production of a global public good is a recent innovation. There are as yet, few examples of the application of this mechanism, perhaps not surprisingly as it implies foregoing tax revenues. One example, under the Millennium Vaccine Initiative, is President Clinton's announcement in January 2000, of up to US$1 billion in tax credits to corporations to promote the delivery of existing vaccines to developing countries and accelerate the development of new vaccines.

Developing countries contribute to the financing of global public goods through their *national budgets* and in some cases through the budgets of state and local governments. These resources cover primarily the cost of national and local activities required for the provision of an international public good, but also involve the direct financing of cooperative programmes with other, mostly developing, countries. These contributions should be acknowledged as part of the total amount of resources devoted to the provision of international and global public goods, even though it may be quite difficult to separate precisely those resources that fund such goods from other national and local expenditures.

International Financial Institutions (IFIs), which include the multilateral development banks (MDBs) and the IMF, finance the provision of international and global public goods from their net income, member contributions, their administrative budgets and by managing trust funds from a variety of sources. Available data demonstrate clearly that IFIs have become increasingly involved over the last decade of the twentieth century in financing global public goods. This has created policy conflicts and exerted great pressures on the use and allocation of MDB net income, primarily because of competing priorities. Some MDB shareholders, including many developing countries, are concerned and even alarmed by the trend towards financing global public goods, which they interpret as diverting scarce resources away from national development priorities. Other shareholders prefer the allocation of net income to strengthen the financial position of the institution, while still others want net income applied to reduce loan charges and interest rates. Finally, some stakeholders would prefer to see a continuing increase in the allocation of finances to global public goods.

The IMFs role in the provision of global public goods is centred squarely on 'financial stability.' The IMF raises its funds primarily from quota subscriptions, or membership fees. One potential source of financing for international and global public goods associated with the IMF, is the creation of 'Special Drawing Rights', the original intention of which was to allow international reserves to be increased in line with needs without imposing costs on member countries. Although this mechanism has not been activated since 1981, it could be used to build up developing country reserves and even to finance the provision of global public goods. Similar remarks would apply to the sale of gold reserves held by the IMF.

The United Nations system was created to coordinate international policies aimed at maintaining peace, promote development and, in general, provide what are now called global public goods. Financing is obtained through assessed budget contributions from member states, voluntary contributions to various funds, and *ad-hoc* funding arrangements such as cost-sharing and special pledging sessions, which usually cover emergencies (e.g.

relief for natural disasters) and shortfalls in assessed and voluntary contributions. Most of these funds are provided by governments, although occasionally private sources may be involved, as is the case with the United Nations Foundation that was established with a US$1 billion gift by television magnate Ted Turner. In a few cases, such as that of the World Intellectual Property Organisation (WIPO), resources are raised through payments for services.

Partnerships for financing international and global public goods

Partnerships, which have become more common during the last decade of the twentieth century, usually combine several sources of financing for specific purposes and often take the form of temporary programmes. They involve coalitions of government agencies, private firms, foundations, civil society organisations and international institutions to different degrees and have evolved a diversity of *ad-hoc* financing, decision making and administrative procedures. Several of these partnerships have focused on the provision of global public goods and their presence has stimulated action beyond what governments alone can do, but the experiences to date also provide evidence of serious limitations and governance problems.[8]

Some implications of the conceptual framework

An approach to the evaluation of financing mechanisms

There are many mechanisms that could potentially finance the provision of international and global public goods. The appropriateness, convenience and feasibility of using one or another of these mechanisms will depend on the specific characteristics of the public good in question and on a variety of other factors, as the case studies examined in this study clearly illustrate. The preceding analysis has presented a general idea of the characteristics of the range of financing options, but dimensions and criteria are also required if the overall potential for effectiveness and efficiency of a particular financing mechanism are to be determined systematically. Table 2 suggests a possible, although very broad, framework for such determination involving the following dimensions:

- *Applicability and scope*, which refers to the variety of international and global public goods it can be used to finance. It can be narrow, broad or intermediate.
- *Amount of funds generated*, which refers to the total amount of resources it can generate, and whether it would be sufficient to adequately finance the provision of the international public good. This amount can be very large, large, moderate or limited.
- *Sustainability of funding*, which indicates whether or not the financing mechanism can guarantee access to funding over time and on a stable and predictable basis. It can range from long-term to sporadic financing.
- *Fairness and equity*, which focuses on whether equal beneficiaries or producers contribute to the financing mechanism in a similar manner, and on whether there is a progressive element in the participation of unequal beneficiaries or producers that reflects their different capacities to contribute. It ranges from high to low.

[8] For examples, see section 3.4.4.

- *Flexibility and capacity to adapt*, which indicates whether it is possible to change and modify the way in which the financing mechanism operates without cumbersome and difficult arrangements. This dimension varies from very high to low.
- *Administrative complexity*, which refers to the legal, administrative, logistic and record keeping burdens it imposes on those in charge of operating the financial mechanism. It also ranges from very high to low.
- *Political feasibility and support*, which indicates whether the financial mechanism can mobilise political support from key constituencies for its implementation within a reasonable time frame. It ranges from high to low.

The matrix of Table 2 is presented only to stimulate policy discussions of financing alternatives for global public goods. Working through the various mechanisms and dimensions should help to shift discussions of global public goods away from statements of moral imperatives and exhortations, and also to anchor them in the practical financial aspects required for their provision. It should help, for example, to differentiate cases where relatively low cost and discrete collective action could produce disproportionately large and sustainable gains, from cases where provision can be assured only with massive, predictable and assured financing. It might also indicate situations where a relatively simple reorienting of priorities might prove more important than the provision of additional financing for the provision of global public goods.

Finally, a case-by-case examination of the financing mechanisms and dimensions set out in Table 2 for specific global public goods should also serve to bring burden sharing issues into better perspective. For example, the emphasis currently being accorded to what may be considered as the 'global' aspects of certain public goods (e.g. basic education) may miss the point that the burden and responsibility to provide and finance them falls largely at the national and local levels. Alternatively, the careful examination of other cases is likely to provide compelling evidence for policy decisions on where exceptions to the principle of subsidiarity need to be made.

Institutional and financing implications

A further set of implications of the proposed conceptual framework relates to the institutional arrangements required for the provision of a global public good. This involves many different institutions at various levels and in different domains from the global to the local. The conceptual ambiguities that have accompanied the emergence of global public goods in the international scene have made it difficult to obtain a clear and orderly picture of the different institutions involved in their provision.

Yet, if the international community were to agree on an individual global public good, a division of labour for its provision would then be required. Two general principles that might prove especially useful in seeking efficiency and effectiveness via an appropriate division of labour are those of economies of scope and subsidiarity. *Economies of scope* occur when the cost of providing two or more international public goods in the same institution is lower than when supplying them through separate institutions. The principle of *subsidiarity* suggests that only those directly involved in the provision and consumption of an international public good should be involved in making and putting into practice initiatives for their provision.

Table 2 General features of financing mechanisms for International and Global Public Goods

Financing mechanisms \ Dimensions			Applicability	Amounts generated	Sustainability	Degree of fairness	Flexibility	Administrative complexity	Political feasibility
Internalising externalities	Market creation or strengthening		Narrow	Moderate	Long term	High	High	High	Medium
	International taxes, fees and levies		Broad	Very large	Long term	High/ medium	Medium	High	Low
Private sources	For-profit corporations		Very narrow	Very limited	Sporadic	Very high	Very high	Low	High
	Not-for-profit corporations		Intermediate/ broad	Limited	Long/ medium term	High	Very high	Low	High
	Individuals		Narrow	Limited/ moderate	Sporadic	Medium	Very high	Very high	Medium
Public sources	National	Developed countries	Very broad	Very large	Long term	High	Low	Medium	High/ medium
		Developing countries	Very broad	Very large	Long term	Low	Low	Medium	Medium
	International	IFIs	Intermediate	Large	Long/ medium term	Medium	Medium/ low	Medium/low	High
		Int. org. and agencies	Very broad	Moderate	Long term	High	Medium	Medium	High
Partnerships	Combination of sources		Broad	Variable	Long term	Medium	Medium	High	Medium

Beyond such general principles, however, it is necessary to determine which organisations and institutions would be better suited to perform the various functions in a global public good delivery system. Table 3 offers a preliminary attempt at defining an inter-institutional division of labour. It proposes that *the United Nations and the regional organisations should take the primary responsibility for setting in motion the political decision processes leading to the establishment of international public goods delivery systems.* In particular, they would have to determine what constitutes the core component and the complementary activities, and which entities should be responsible for each. The UN and the regional organisations have political legitimacy and are representative of the diversity of national interests that must be reconciled in the process of identifying whether a good, service or outcome should be considered as an international or global public good. The multilateral development banks and other international financial institutions should play a moderate role in such political decision processes, while developed and developing country agencies, foundations, private firms and non-governmental organisations would play minor roles, although they could convey their concerns and views through the UN and regional organisations.

Table 3 Division of labour for the provision and financing of international and global public goods

Actors / Functions	Private sector	Foundations and NGOs	Developing countries	Developed countries	IFIs	UN and regional orgs.
Defining and arranging for the delivery of international and global public goods (establishing the delivery system)	*	*	*	*	**	***
Support the core component of an international public goods delivery system	*	**	*	***	**	**
Support the complementary regional, national and local activities in the international public goods delivery system (capacity building, institutional development, knowledge brokering)	**	**	***	**	***	**

*Minor role; **Moderate role; ***Major role

Table 3 suggests further that the support and financing of the range of complementary activities linked to the provision of international and global public good would be the primary responsibility of developing countries and of the international financial

institutions (World Bank, regional and sub-regional development banks, international funds), with the United Nations and regional organisations, developed country agencies, together with foundations, private firms and non-governmental organisations, playing a secondary role. Finally, the support and financing of the core component of the delivery system would be the primary responsibility of developed countries, both for international solidarity and enlightened self-interest reasons, while United Nations, regional organisations, international financial institutions, foundations and non-governmental organisations would play a moderate role, and the private sector and developing countries would play just a minor role.

Case studies

This report applies the conceptual framework outlined above to five areas of common concern, which many have claimed to be global public goods. These are: biodiversity conservation, climate change mitigation, HIV/AIDS research, peace and security, and financial stability. In the first of these, the focus was on how evolutionary resilience and the possibility of developing useful products are related to the global public good defined as *conservation of biodiversity*. In the second case, the global public good was identified as the *mitigation of climate change*, which leads directly to the reduction of greenhouse gas emissions that contribute to it. In the third case study, the *generation and dissemination of knowledge to produce HIV/AIDS vaccines* was considered the global public good. Building on the work of the Carnegie Commission on Preventing Deadly Conflict, in the fourth case the global public good was identified as the *operational prevention of violent conflicts*, and in the fifth case the *maintenance of financial stability* was identified as the global public good.

Some common features of the case studies and analytical reviews

The complexity and diversity of conceptual and policy issues associated with global public goods make their systematic treatment a rather difficult proposition. Nevertheless, the cases suggest that the conceptual framework advanced in this report can be of assistance to organise, in an orderly manner, discussions about the provision and financing of global public good.

A first observation is that *it is useful to restrict the use of the term 'global public good'* only to those aspects of the common global concern that satisfy to a large extent the three criteria of significant cross-border externalities, non-excludability and non-rivalry. Second, in all cases *it is possible to identify the various components of an international public goods delivery system*, and also, to a lesser extent, to differentiate the core component from the complementary activities that are essential for its provision. The roles played by knowledge, public awareness and political will, in determining what becomes a 'global public good' – be it biodiversity conservation, mitigating climate change, generating knowledge to reduce the incidence of HIV/ AIDS, maintaining peace and security, or preserving financial stability – highlight the *political nature* of the decisions involved in the provision and financing of global public goods, and in particular the decisions about what constitutes the *core component* and what the *complementary activities*.

Third, the *appropriate design and operation of regimes* is crucial for the functioning of an international public goods delivery system. The problems faced in the provision of

the global public goods mitigation of climate change and peace and security are related to the great difficulties in establishing equitable and effective regimes, which in turn are a reflection of the diverging interests of key players. They are also related to the slow process of achieving consensus in the relevant epistemic communities, be it on the extent and causes of climate change or on the appropriate ways to resolve violent conflicts. In contrast, the problems associated with providing the global public good biodiversity conservation appear to be related more to institutional arrangements than to the characteristics of regimes and to disagreements among members of its epistemic community.

These questions are closely related to a fourth observation: the importance of *effective participation*, both in terms of involving all relevant countries and related actors in the design and operation of global public good regimes, and in terms of an individual country taking part in as many regimes as possible. The former is a prerequisite for the legitimacy of regimes, which highlights the need to support the participation of developing countries in the negotiations that lead to their establishment. The latter would help to expand options and allow compromises and tradeoffs across global issues, rather than focusing on a single or just a few negotiations with a limited set of potential outcomes.

A fifth observation refers to the variety of financing mechanisms involved in the provision of global public goods, and the way in which these are employed in the case of a specific global public good. In some cases there is the possibility of making beneficiaries and producers of the global public good pay for its provision and in others the private sector can contribute with significant financial resources, but in all cases *there is a most important and irreplaceable role for the public sector*. There is no way of taking out the 'public' in the financing of global *public* goods. At the same time, public financing can be arranged by using many different mechanisms and by combining them in a variety of ways. As shown by the case studies, the set of possible instruments to finance a particular global public good will depend on its characteristics. There is no 'general' solution to the problem of global public good finance. Theoretical considerations based on the economic theory of public goods can help to obtain insights about their nature and about institutional considerations, but they are less likely to be useful in determining how best to mobilise financial resources to ensure the provision of a global public good.

Concluding remarks and suggestions

The conceptual framework of an idealised international public goods delivery system makes it possible to begin answering at least some of the preoccupations and reservations that are frequently expressed about global public goods.

- *To what extent is the international public goods approach useful in addressing global common concerns?*

  To quite a significant extent. Indeed, by focusing attention on the limitations of current political, legal, institutional and financial arrangements for addressing global problems, the global public goods approach has already made an important contribution. However, there is a need for pulling together a growing number of disparate conceptual contributions (including, of course, the ideas put forward in

this report), to reach consensus and broad agreement on definitions, and to move from the intellectual to the policy arena. In a sense, this would be similar to what happened with the concept of 'sustainable development' during the last decade. Initially it generated a controversy and debate, but gradually it became more precise, policy-oriented and widely accepted.

- *How should the process of defining global public goods be approached?*

  With restraint, circumspection, rigour and patience. Current practice has led to grouping all types of global concerns, aspirations or desirable situations under the title of 'global public goods'. Without defining a global public good with precision – a task that involves complex negotiation and interactions of political and technical nature among many stakeholders – this could soon to render this term meaningless. Also, the more focused the definition, the greater the possibility of deriving useful policy implications and of mobilising financial resources. This requires adopting rather stringent conditions regarding the reach of cross-border spill-overs or externalities, and the degrees of non-excludability and non-rivalry. The elements of an 'idealised international public goods delivery system', together with the distinction between the core component and the complementary activities, can be of help in this task.

- *How should choices be made on which international and global public goods to provide?*

  By emphasising the political nature of these choices. The determination of what are international public goods and which ones have priority for provision involves a multiplicity of actors with different interests and agendas. The international community of nations, corporations and civil society associations faces difficult choices in setting priorities, allocating all types of scarce resources (political capital, attention of key decision-makers, institutional and organisational capabilities, finance), and in mobilising support for such choices. These choices must be informed by global equity considerations, by international solidarity and by the need to eradicate world poverty, or, at least, to meet the internationally agreed target of halving poverty by 2015.

  The lack of public spaces specifically devoted to the discussion, negotiation and agreement on such matters can be seen as a major shortcoming of the current international system. A possible response to this might be the establishment of a task force or working group to address the issue of global public goods, preferably of a temporary nature and within the UN system but with a mandate to hold consultations with international private sector and civil society representatives. Its function would be to debate these issues systematically and to give recommendations on priorities and on the structure of international public goods delivery systems. It would, of course, be no easy task to reach consensus on whether halting the spread of HIV/AIDS is more, or less important, than conserving biodiversity, or on whether maintaining peace and security should take precedence over abating climate change. Such choices, however, are currently being made –albeit implicitly – without much discussion and without attention to the asymmetries that are inherent in international power relations. The establishment of a task force or working group may be seen as a first step to redress this situation, and could be one of the recommendations of the International Conference on Financing for Development, scheduled for early 2002 in Mexico.

- *How can the widest possible participation be ensured in the design and implementation of international public goods delivery systems?*

  It cannot, unless better institutional arrangements are put in place. The varying extents to which countries – as well as firms, associations and individuals – benefit from and contribute to the production of an international public good lead them to assign different priorities to externalities, spill-overs, degrees of excludability and other characteristics of international public goods. Identifying and responding to such diversity of demands requires highly inclusive institutional arrangements, capable of processing a multiplicity of viewpoints and of ensuring the participation of all relevant stakeholders, while at the same time avoiding glaring inconsistencies and maintaining overall coherence. In this regard, the perception that arrangements for the provision for some public goods are an imposition of rich donor countries and Northern NGOs reduces their legitimacy, creates ownership problems and conspires against the active involvement of those who actually produce the international public good. Therefore, discussions and negotiations regarding the definition, provision and financing of international public goods should involve the participation and cooperation of as many of the affected stakeholders and constituencies as possible.

  This is not happening, and will not happen, in the absence of mechanisms to build and support the capacity of developing country stakeholders – which are usually at a disadvantage – for active and meaningful participation in the design and operation of global public goods regimes. Such mechanisms could take the form of a general 'participation fund' along the lines proposed by the UNDP,[9] or of specific participation financing tied to an individual global public good. They would allow reaching out to researchers, academics, intellectuals, entrepreneurs, government officials and informed representatives of civil society in developing countries, whose participation in decisions affecting the provision of global public goods could also be considered, in itself, as an international public good.
- *How can global, regional, national and local interests be aligned so as to ensure that effective actions are taken to ensure the supply of an international or global public good?*

  By creating appropriate incentive systems and financing mechanisms. A great variety of state, private and civil society actors must be involved in the functioning of an international public goods delivery system, all the way from raising awareness about its importance at the global level down to the specific activities that actually produce or consume it. In particular, it is important to reach agreement on what constitute the core component and the complementary activities in the delivery system. The international community bears the main responsibility for undertaking and financing the activities that are in the core component, while national and local organisations have a similar obligation with regard to the complementary ones. Both sets of activities should be closely coordinated and harmonised to create an effective and efficient international public goods delivery system. This implies, among other things, agreeing on a division of labour between the various international institutions, government agencies, private sector entities and civil society organisations that participate in the delivery system.

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[9] For further information on the UNDP participation fund, see Kaul *et al.* 1999.

The regimes that are part of the delivery system should establish rules, regulations, incentives, financing mechanisms and procedures to influence their behaviour and motivate their active involvement in the provision of the public good. Yet, it may not be enough to focus on the explicit policies directly associated with an international public good delivery system; other international, national or local policies can thwart its purpose and contain, in effect, an array of 'implicit' public goods policies that neutralise efforts to provide it. For example, energy pricing policies may stimulate the consumption of fossil fuels and undermine emissions reduction programmes; agricultural and forestry policies may override biodiversity conservation efforts, and industrial property regulations may constrain the ability to halt the spread of HIV/AIDS. In addition, well-designed and properly aligned incentive systems could help in avoiding free-riding and the underprovision of international public goods.

Aligning the activities of the variety of public, private and civil society agents that intervene in an international public goods delivery system demands is a complex task that requires substantive policy analysis and administrative capabilities. These are not always found in international organisations and may be available only to a limited extent in the national and local governments, private sector and civil society institutions of developing countries. Therefore, it is essential to strengthen their capacity to contribute to the design and operation of an effective international public goods delivery system. At the international level it is important to reinforce UN bodies and other regional organisations, and to avoid an excessive reliance on the multilateral development banks. As indicated in the preceding sections, the multilateral development banks should have an important, but not primary role in the provision of global public goods, for they must balance this role with their central functions of financial intermediation and national capacity building aimed at reducing poverty and improving living standards. At the same time, multilateral development banks should include international and global public goods concepts and practices in their operations, and particularly in their policy dialogues with borrowers and grantees.

- *How best to approach financing issues in an international public goods delivery system?*

There is no single 'optimal' approach to the financing of global public goods. While some general principles and questions are useful in the examination of financial issues and alternatives (e.g. to what extent can the externalities be internalised? Could a market be created? Could international fees or taxes be levied? How far down along the continuum from global to local should a global public good stretch?), a singular set of appropriate financial arrangements will apply for each specific international public good. This implies adopting a systematic case-by-case approach to the identification and choice of financing mechanisms. Nevertheless, a few guidelines can be inferred from the conceptual framework, the case studies and the review of the literature in this report.

First, even in cases where externalities can be internalised and market-based instruments established to provide incentives for private agents to engage in the production of an international public good, public intervention, including public financing, will be required. This is because the proper operation of a public goods delivery system requires transparency, openness, accountability and an effective regulatory framework. These good governance features require public financing. Thus,

a certain amount of public financing will be required for market mechanisms to deliver international public goods.

Second, public funding is and will remain by far the main source of financing for international public goods. The scope for private sources, including both for-profit and not- for-profit corporations and individuals, is important and growing, but the amounts generated are likely to remain quite modest in comparison to public funding. Moreover, there is a much higher degree of uncertainty with regard to predictability and sustainability of funding from private sources. There is, in the end, no substitute for public funding of international public goods.

Third, to the extent that the numerous proposals and calls for the provision of international public goods become operational (i.e. delivery systems are put in place), more stable and predictable sources of public funding for such goods will be essential. Existing arrangements, based on limited assessed and substantive voluntary contributions to the United Nations and other international organisations are weak and unreliable. They will not provide the security that is essential for an expanded provision of international public goods. Even legally binding periodic replenishments have often been ineffective, as donors sometimes do not honour their commitments. Thus if the international system evolves to the provision of global public goods on a widespread basis, international taxation, fees and levies become essential, indeed inevitable.

- *Will a global public goods approach lead to additional resources for development cooperation?*

  It is possible, but not likely in the short term. While it has been claimed that a global public goods approach could 'rescue aid' and increase resources for development assistance, there are equally compelling arguments that it may divert scarce aid resources. The messy subject of 'additionality', with its many conceptual, statistical and political ramifications, comes to the fore when examining such claims and counterclaims. For additional financing to be raised through the use of a global public goods approach it would be first necessary to clearly define these goods, to identify the delivery systems and specify the funds required. It would then be necessary to ensure that resources allocated for this purpose do not reduce the amount of aid, and also that such allocations do not affect negatively the prospects for future increases in development assistance.

  In order to do this, it is essential to separate clearly those resources allocated to development assistance in general, which would benefit primarily the recipient countries, from those used in the provision of global public goods, which benefit developed countries at least as much as developing countries. The financing of international and global public goods should not come at the expense of development assistance flows, and particularly those directed to the poorest developing countries. This has important implications for development assistance reporting procedures and statistical data gathering activities.

- *How can uncertainty, time lags and the dynamic character of international public goods be dealt with?*

  By being flexible, adaptive and adopting a learning stance. In the relatively short time international and global public goods issues have acquired prominence, and despite the confusion and controversy that have accompanied their eruption onto the international scene, an informal collective learning process appears to be under

way. Even as the concept of public goods has become a moving target, intellectual contributions are now building on one another and academic and policy-oriented debates are focusing on the most relevant of these. But, if the concept of international and public goods is to realise its potential, it will be necessary to put into practice a broader and more operational collective learning process.

This would involve treating initiatives to provide international and global public goods as experiments from which to learn. Temporary and highly focused institutional arrangements involving multiple stakeholders may be a way to proceed forward without undue rigidities and without committing excessive amounts of resources. Such arrangements would have to be monitored and evaluated continuously, with the aim of spreading best practice (this could be a task for a possible 'international and global public goods' entity associated with the UN). Without too much exaggeration, enhancing the learning capacity of the international community to improve the provision of international and global public goods may be itself considered as a public good.

In the last analysis, transforming a most promising approach – international and global public goods – into an effective instrument for dealing with common global concerns will require, beyond instituting a collective learning process, very strong leadership along with forward-looking countries, institutions and persons committed to the goal of global equity and sharing the responsibility of realising such potential.

1 Introduction

This study is part of the 'Development Financing 2000' initiative of Sweden's Ministry for Foreign Affairs. It has been preceded by commissioned reports on financing the United Nations system, on the future of the multilateral development banks (MDBs) and on transboundary water management as an international public good. Among other things, these previous studies drew attention to the growing mismatch between, on the one hand, new demands for international public goods as a consequence of globalisation, and the existing system of institutions, including financing instruments, on the other. An important and logical extension was the request for the present report, the focus of which is specifically on financial mechanisms for the provision of global public goods. The views expressed in the study are those of the authors and do not necessarily reflect the views of the Swedish Ministry for Foreign Affairs.

The impetus to the current focus of much international policy debate on the notion of global public goods can be traced to the seminal 1999 study *Global Public Goods: Development Cooperation in the 21st Century,*[10] produced under the auspices of the United Nations Development Programme (UNDP). The past 2 years has produced an array of studies, reports, commissions and policy initiatives, and the list continues to expand at an ever increasing rate. The subject has become central to the agenda of the Development Committee of the International Monetary Fund (IMF) and the World Bank. Proposals by coalitions of non-governmental organisations, reports by international institutions, research papers by think tanks and scholars, international conferences to address global issues (the spread of AIDS, climate change), meetings of groups of experts and policy-makers (financing for development, macroeconomics and health, financing biodiversity), and initiatives to establish international taxes, are all continuously changing the content of debates on global public goods. In addition, new initiatives, which are underway, by the World Bank, the UNDP and the Carnegie Endowment for International Peace, among other institutions, have aimed at making this concept more operational. All of this has transformed the subject of global public goods into a moving target.

This enthusiasm for the concept of global public goods derives, in large measure, from the view that it may bring together, under the same framework, many challenges and problems of development that have generally been treated as distinct and separate, and that this may serve as an effective catalyst to joint actions on issues of global concern. There is also the hope that an emphasis on global public goods will generate a revival of political commitment to development assistance.

A rich set of ideas, insights and aspirations, therefore, is associated with the concept of global public goods. There are also, however, serious reservations. In the course of this study, we encountered international development scholars, practitioners and decision-makers (see Box 1.1) who expressed concern and even alarm at what they described as the 'fuzziness' of the concept of global public goods and over 'dangerous and distorted claims' being made in the name of global goods. These reservations underscore the fact that there remain major unresolved conceptual issues associated with the notion of global public goods. As this report hopes to make clear, they also serve to emphasise the

[10] Kaul, Inge, Grunberg, I. and Stern, M., 1999, *Global Public Goods: International Co-operation in the 21st Century*, New York: Oxford University Press.

Box 1.1 Some concerns regarding the value of the concept of global public goods

- 'The entire conceptual and policy treatment of this subject called *global public goods* is badly confused. The reduction or elimination of AIDS, for example, is not at all a global public good, but rather a local or individual good. There are major problems and shortfalls in financing this good, but it remains false and misleading to equate this with a global public good.'
- 'The current policy discourse on global public goods has become a tyranny of muddled thinking.'
- 'The combination of a focus on global public goods as the latest *flavour of the month* in international development agencies and the *fuzziness* of thinking on this matter poses serious risks to sound decision-making.'
- 'From the perspective of developing countries, the risks in the current discussions on and movement towards financing global public goods are enormous. There will be no new funds and the result will be a further diversion of aid from poor countries to rich countries.'
- 'Academics have been doing interesting work on global public goods, but it seems difficult to apply their work to any individual situation and their work seems to have little relevance to the way in which decisions are made and to issues of financing.'

Sources: Interviews conducted by the authors (see Annex C for a list of persons interviewed).

appropriateness of much greater prudence than has generally been in evidence in recent claims as to what constitutes a global public good.

Thus, a leading North American scholar has stated that 'during the Cold War, the United States and its allies provided the *global public good* of containment, investing trillions of dollars to stop the spread of communism' (Sachs 2001), and a prominent former international civil servant can declare that 'the international monetary system may be seen as a *global public good.* It is essentially the same system for everyone.' (Camdessus 1999) (emphasis added). Many would take exception to the first statement, and the second glosses over the huge asymmetries that characterise international financial relations. Both are made without acknowledging that there are widely different – and equally legitimate – perspectives on these issues. Another example of imprecision in invoking the term global public goods, is seen in the claim that: 'The means to preserve the conditions for a globally sustainable development of each individual and its community must be regarded as *global public goods,* independently of whether the source of production and the reach of effects is local, national or global' (Banca Etica 2001) (emphasis added). From this perspective there is little that would not be a global public good.

This leads to a range of difficult and basic questions, the most basic of which is: to what extent is it appropriate to use the term global public goods? The concept of a public good is rooted in economics where it has been assigned reasonably tight boundaries. Should such a precise concept be applied to the broad range of emerging international challenges confronting, at the same time, small villages in poor developing regions and the community of nation-states? What are the financial and institutional implications of

adopting a particular definition of a global public good? How and with whose participation and consent should decisions about defining and providing global public goods be made? What can decision-makers draw upon in making public policy choices in response to expanding and competing claims for financial resources in the name of global public goods? Will attention to global public goods divert scarce resources away from the urgent national needs of the poorest countries and into areas that are of most immediate consequence to the citizens of richer countries?

This report does not pretend to provide answers to such complex questions, although it does attempt to address them as systematically as possible. In doing so, it draws heavily on the work of other researchers, and on the three case studies (climate change, biodiversity and HIV/AIDS research) and two analytical reviews (peace and security, and financial stability) conducted as part of the study. The main concern driving the study has been to place issues related the financing of global public goods in sharper and policy-relevant perspective. This is done by presenting an idealised 'international public goods delivery system', by offering an exploratory tree for examining financing options and by drawing their institutional and financial implications. The study can thus be seen as an attempt to build a bridge between academic discussions and on-going policy-making processes in the field of international and global public goods.

Following this introductory *first section*, the *second section* of the report contains an analysis of the reasons why the concept of global public goods has gained such broad international acceptance at the beginning of the twenty-first century. The *third section* presents a conceptual framework for examining the provision and financing of international and global public goods. *Section four* offers some ideas on how to evaluate financing mechanisms and derives some institutional and financing implications of the conceptual framework. The *fifth section* summarises the case studies and analytical reviews, highlighting the way they relate to the conceptual framework. The *sixth and last section* offers some concluding remarks and suggestions. Four annexes complement this report. In addition, three working papers on the case studies (biodiversity conservation, climate change mitigation, HIV/AIDS vaccines) appear separately.

2 The growing importance of international and global public goods

2.1 The concept of public goods

Before turning to international or global public goods, it is important to begin with a brief overview of basic concepts. The idea of 'public goods' has a long intellectual history that can be traced at least as far back as 1739, to David Hume's discussion of providing for the 'common good.' Along the way, classical economists like Adam Smith, David Ricardo and David Malthus drew attention to the need for concerted action to provide for goods that benefit a community. The vision most commonly associated with Adam Smith is one of a self-feeding virtuous circle of widening markets that would produce an increasing division of labour that would in turn lead back to wider markets. But Smith also set out unequivocally in *The Wealth of Nations* that the virtuous circle could be attained only if complemented by essential public goods provided by a benevolent and effective government or 'sovereign.' Smith set out a list of essential public goods to be provided by government that included not only defence and maximum extension of education, but also 'certain public works' such as roads, bridges, canals, water supply and, interestingly, banking. Thus, the idea of public goods provisioning is well established in economic theory and policy.[11]

However, it was not until 1954 that a general theory of pure public goods was explicitly developed with the work of Paul Samuelson and his article on 'The pure theory of public expenditure' (Samuelson 1954) and his two subsequent articles (Samuelson 1955, 1958). The framework set out by Samuelson continues to provide the theoretical base for the study of public goods. By introducing the idea of a 'pure' concept, Samuelson was able to develop two essential characteristics that differentiate a private good from a pure public good: *non-excludability* and *non-rivalry. Non-excludability* means that it is either impossible or prohibitively costly to exclude those who do not pay for the good from consuming it. Once the good has been produced, its benefits – or harm – accrue to all. The *non-rivalry* property implies that any one person's consumption of the *public good* has no effect on the amount of it available for others. The corresponding concept of the *public bad* refers to goods that have a negative utility – air pollution, water contamination, civil strife, financial instability, spread of disease – which the community would benefit from preventing or reducing. Public bads are clearly the other side of the same public goods coin.

Since Samuelson's initial exposition of the concept of public goods, an increasing number of criticisms have been levelled at the strictly economic definitions and notions of public goods.[12] It should also be recalled that Samuelson himself maintained that a

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[11] Objections to the concept of public goods have revolved around the general idea that it raises the possibility of justifying what some consider unnecessary government functions and interventions. For example, Malkin and Wildavsky (1991) argue that a good is not definable as a public good by any objective criteria and that, on the contrary, it 'becomes public by the social decision to treat it that way'. Therefore, they conclude that the distinction between private and public goods should be abandoned. In contrast, Adams and McCormick (1993) consider that 'the traditional distinction between public and private goods needs to be expanded, not abandoned'.

[12] Ver Eecke (1999), has decried 'the conceptual imprecision' in the way in which economists use the term public good, and has identified at least 13 different definitions in the literature. Nevertheless, provided that it is treated as 'an ideal concept', he argues that it can be valuable in helping to identify potential welfare gains from collective action.

public good was in fact an ideal theoretical concept that could not strictly be applied to real policy matters. Ultimately, in his view, public goods were determined by qualitative ethical factors and were dependent upon political consensus. Samuelson was very cautious in his claims about how a public good could be conceptualised and defined, and acutely aware of the practical limitations of applying his ideal concept:

> I am rash enough to think that in almost every one of the legitimate functions of government that critics put forward there is to be found a blending of the extreme antipodal models [that of a pure private good and a pure public good]. Economic theory should add what it can to our understanding of government activities. I join with critics in hoping that its pretentious claims will not discourage other economic approaches, other contributions from, neighboring disciplines. (Samuelson 1955: 389)

Following from the work of Samuelson, three additional concepts have become closely linked to the notion of public goods: externalities, free-riding and opportunities for collective gain. *Externalities*, or third-party effects, emerge when the impacts of an action are not borne by the actors directly involved, but by someone else. These can be positive, such as the effects of educating women on lowering birth rates, and negative, for example releasing contaminants into a river. Externalities are a problem because the costs or benefits associated with them are not reflected in the price of the good itself. If the cost of the externality is effectively attributed to the agent that generates it, the externality has been 'internalised' and financed directly by the agent. Ultimately, the motivation to invest in the provision of public goods arises from the desire to encourage positive externalities, or to correct for negative ones.

The phenomenon of *free-riding* is directly associated with the non-rivalrous and non-excludable character of public goods, and refers to a lack of incentives on the part of users to finance their supply. Public goods 'elicit patterns of behaviour that, from the individual agent's viewpoint, are quite rational. Yet from a collective viewpoint – such as that of a local community, a nation or humanity as a whole – the result is sub-optimal and can be disastrous' (Kaul *et al.*, 1999:6). Free-riding asserts that there is a powerful incentive for individual agents to avoid contributing to the provision of a public good. From the perspective of individual rationality, there is no reason why a consumer should reveal willingness to pay (express preferences) for a public good, since doing so would permit an agency representing the public (the government) to demand payment. This results in miscommunication of preferences to potential suppliers and a mismatch between the supply and demand of a given public good.

Goods that have very high degrees of the properties of non-excludability and non-rivalry are often referred to as 'pure' public goods. In theory, pure public goods do not require agencies such as the government or the private sector to ensure optimal levels of provision; they are just available to everyone. However, in reality public goods are rarely 'pure'. For instance, public goods such as roads have an optimal carrying capacity at which, once reached, any additional traffic increases congestion. Thus, after a certain critical point the good becomes rivalrous. Impure public goods require government intervention, agreements between private agents or a combination of both to ensure adequate levels of provision. However, it is unlikely that private initiative alone will provide public goods at optimal levels, for a public good enjoyed by a large group will

not be provided if that group can not organise itself. The fact that most public goods are 'impure' rather than 'pure' makes *collective action* the focal point for the intellectual and policy concerns regarding the provision of public goods.

Putting together the *existence of opportunities for collective gain* with the *reluctance to pay for and to reveal interest* in public goods, it is possible to conclude that, in spite of the potential for improving the welfare of a community (due to their non-rivalrous character), public goods are difficult to finance (primarily because of their non-excludability).

Those public goods that are defined as impure, or of mixed composition, meet the criteria of non-excludability and non-rivalry only in a partial way. Impure public goods that are non-rivalrous in consumption but excludable are called *club goods* (a club is formed when users come together to provide a shared good, based on an agreed toll or tax). Goods that are mostly non-excludable, but rivalrous in consumption are *common pool resources*, which tend to be overused in the absence of rules and enforcing mechanisms.[13] The prudent or sustainable use of common property is a matter of collective choice, and government action (e.g. regulation) may be required to ensure equitable and competitive access to club goods.

As public goods represent a rich set of activities that involve a multiplicity of dimensions, many different ways to classify them have been proposed. These classification schemes are the result of combining two or more dimensions. Such dimensions have included spill-over range (geographical extension, range socio-economic groups, generations), aggregation technology (summation, best shot, weakest link, weighted sum), type of benefit (risk reduction, capacity, utility), activity (core and complementary), and means or goals (intermediate, final), among others. Several of these typologies are described in Annex B.

In short, the concept of 'public goods' has three interrelated characteristics. First, they produce significant externalities; second, they are – to a very important degree – non-rivalrous and non-excludable; and third, they generate opportunities for improving welfare through collective action. In addition, social and cultural preferences, usually expressed in the form of public awareness and political will, determine which public goods to offer and the trade-offs involved in their provision.

2.2 Public goods in the age of globalisation

Public goods have become an important international issue in the transition to the twenty-first century, a time marked by serious concern and heated debates about the process of 'globalisation'. As underscored by the United Kingdom's recent White Paper on Globalisation and Poverty, this is a radically different context from that which framed previous examinations and discussions about public goods, primarily because the

[13] The term 'common pool' is based on the work of Garret Harding on the 'tragedy of the commons' (1968), which describes a group of herdsmen who graze their cattle in a common pasture. The tragedy starts the moment any one of the herdsmen realises that he can gain personal benefit by increasing the size of his herd on the pasture. Each extra animal grazing the commons leads to additional destruction of the common pool resource. The negative effects, however, are distributed within the group of users. Given this distribution of costs and benefits it is quite sensible for each herdsman to add extra animals to the flock which ultimately leads to the destruction of the common pasture due to overgrazing.

simultaneous processes of integration and exclusion of countries, and of peoples within countries, that are the result of globalisation, are creating entirely new demands for public goods (United Kingdom DFID 2000). These processes have led to the emergence of a *fractured global order*, an order that is global but not integrated. An order that puts all human beings in contact with each other, but simultaneously maintains deep fissures between different groups of countries and between peoples within countries; an order that exempts few from an interdependent vulnerability to global forces.

The structure of the fractured global order can be conceptualised in terms of three closely interconnected and partially overlapping domains, each of which has its own specific features and ways of interacting with the other two. These are the domain of the global, the domain of the networks, and the domain of the local. The *domain of the global* is made up of the intensive, dense and almost simultaneous exchange of symbols and intangible goods on a planetary scale, made possible by advances in information and communications technology. It is also made of the pervasive, diffuse and far-reaching impact of actions by individual agents, which through aggregation and amplification affect the majority of the world's population and even future generations. The *domain of the networks* consists of a multiplicity of exchanges and combinations of tangible and intangible goods, which flow through a myriad of identifiable channels and nodes that interconnect individuals and social groups. Interactions in the domain of the networks involve all kinds of organisations: public institutions, private corporations and civil society associations, whose interrelations create a tangled web of transgovernmental, transcorporate and transassociational networks that overlap each other. The *domain of the local* is constituted by those human activities anchored in time and space, and which comprise the actual production, exchange and consumption of tangible goods and services (Sagasti and Alcalde 1999; and especially, Annex C of Bezanson *et al.* 2000).

The emerging fractured global order and its three domains are characterised by numerous fault lines of political, economic, social, environmental, cultural, scientific and technological nature; these faults overlap partially and often shift direction; they sometimes reinforce each other and at other times work at cross purposes. The overall picture they paint is one of turbulence and uncertainty in which a variety of contradictory processes open up a wide range of opportunities and threats that defy established habits of thought. Integration and exclusion coexist uneasily side-by-side in all domains and aspects of the fractured global order.[14]

The domain of the global has emerged into full view during the last quarter of the twentieth century, partly as a result of advances in knowledge, technology and industrial civilisation, and partly as an outgrowth of the domain of the networks. This is made clear, for example, by the radical reappraisal that has taken place of the relations between humanity and the environment. The view that ecosystems are immensely resilient and have infinite regenerative capacity has been replaced by concern that the aggregate impact of human activities on the biosphere could cross a threshold and cause irreversible damage. Climate change, the disappearance of the Ozone layer and the loss of biodiversity – all of

[14] It has been argued that this fractured global order has long been in the making. While it is necessary to fully acknowledge the importance of a centuries' old perspective of globalisation, the current reality has acquired a planetary character and has created a new setting for the evolution of human interactions.

which belong to the domain of the global – may be some of the signs that mark a crossing of such threshold.[15]

The establishment of global communities through instantaneous information and communications systems; the emergence of global finance, which has cut loose from transactions in goods and services and acquired an independent character of its own; the growing exchanges of knowledge, which involve even remote corners of the world; the increasingly global nature of human security concerns and the rapid spread of diseases beyond national and regional borders, are further indications of the way in which the domain of the global is now in full view.

The emergence of a fractured global order also involves a major transfer of political power. Many concerns, issues, decisions and activities that were previously national or local in nature have now acquired a wider scope and have moved beyond the exclusive control of the nation state. Although many of these 'cross-border externalities' are not new (war and disease have spread internationally for thousands of years), the speed, and broad reach of their contagion effects, have changed their character in a fundamental way. As the actions of one or more agents (government, corporations, associations and even individuals) create costs or benefits for other agents not party to the transaction and located beyond national, institutional and organisational boundaries – and even across generations – narrowly construed domestic and local policy responses are clearly insufficient.

The cross-border nature of these externalities can be addressed effectively only through cooperative actions involving multiple actors widely spread throughout the world. Moreover, because cooperative actions on this basis are likely to involve significant degrees of non-rivalry and non-excludability, the concept of *international public goods* is being applied increasingly in analysing and articulating policy responses to the new challenges of a fractured global order. The boundaries between international public goods and global public goods are quite diffuse. These terms are frequently used interchangeably, a practice followed by this report.

However, applying the concept of public goods at the international or global levels creates several conceptual and practical problems. The externalities associated with international public goods can be global in the sense of affecting the whole planet; regional when they affect a subcontinent, continent, or hemisphere; or sub-regional when their impact extends to a relatively small number of neighbouring countries. In all cases, arranging for the provision of international public goods is much more complex than in the case of public goods at the national or local levels. For one thing, free-riding problems are exacerbated at the international level. Once an international public good is provided, it cannot be divided into discrete units to be consumed by separate consumers. All those countries, institutions, organisations and individuals with a stake in the international public good can receive its benefits, whether or not they contribute to its provision. A further factor is that the beneficiaries of global public goods are likely very numerous and involve diverse cross sections of the world's population. Their interests and concerns will vary and cooperation will not be easy to achieve, partly because of differences in

[15] This and other aspects of the fractured global order, whose emergence is framed in the transition to a 'Post-Baconian Age', are discussed in Sagasti (1997).

cultural values, policy priorities and other preferences, and also because of lack of information, understanding and trust.

Moreover, nations differ both in their need for international public goods and their capacity to supply them. The degree to which different countries benefit from an international public good depends on their situation and on the characteristics of the specific good. Income levels, standards of living, geography, culture and values have a major influence on the willingness to pay for and participate in the provision of an international public good. For example, generalised financial instability negatively affects households and firms everywhere, but can be tolerated more by rich people and developed countries, than by the poor and developing countries. Similarly, the spread of HIV/AIDS affects Africa more than North America, global warming has a disastrous impact on low-lying islands, but less so on temperate zones, desertification affects countries in dry areas, but not the humid tropics, biodiversity loss takes place to a greater extent in some parts of the world than in others, and violent conflicts emerge more frequently in poor regions with long histories of ethnic strife than in other places.

One of the main policy implications of the concept of public goods is that the State must play a role in their provision. A supranational government backed by the power to tax could ensure there is no mismatch between the demand and supply of international public goods. However, and notwithstanding the growing number of international regimes, as well as many other examples of successful international cooperation, there is no realistic prospect of creating the international equivalent of a national government in the medium term. Therefore, as Kindelberger (1986) put it, there is the need to provide 'international public goods without international government', which in turn requires an unusual degree of coordination of efforts across national borders and among a wide variety of stakeholders. International cooperation is essential to increase the provision of public goods and decrease the proliferation of public bads, such as global warming, spread of diseases, loss of biodiversity, proliferation of violent conflicts and generalised financial instability.

A further issue is that the emphasis on the 'international' character of international public goods must not lose sight of the fact that their actual provision is ultimately rooted in specific activities at the national and local levels. Without the capacity to engage in actions that contribute to the supply of international public goods, national and local governments, institutions, organisations and individuals cannot participate in their provision. In the case of global public goods, this brings to the fore the question of how to articulate initiatives that span the whole range from the domain of the global (where the global public good emerges in view), through the domain of the networks (where states, institutions and organisations arrange for its provision), and to the domain of the local (where specific agents engage in the consumption and production of a global public good).

As a consequence, strong national and local foundations are required to reap the benefits of global public goods and contribute to their provision. In the case of developing countries, this underscores the complementarity between the provision of global public goods and domestic capacity building efforts, for *it does not make sense to focus primarily on the financing and provision of global public goods without simultaneously assisting developing countries in their own development efforts that lead to the actual production and consumption of such goods*.

Closely related is the question of whether taking active part in the provision of global public goods could place an unfair burden on poor countries struggling to improve the living standards of their people. This would occur if such countries, and the institutions, firms and organisations in them, were required to divert resources from domestic development tasks to share the cost of production of an international public good from which they would receive marginal relative benefit. This would result in an 'inverse Robin Hood effect' (Stalgren 2000: 34), which would worsen inequalities between rich and poor countries. A similar outcome would be observed, if scarce development assistance resources were reallocated away from domestic development activities to the provision of international public goods.

As the above makes clear, there are significant issues, problems and challenges that arise from scaling up the concept of public goods to address international concerns in a fractured global order. Much of the current discourse involves imprecise definition and, as we shall see in this report, a tendency to indiscriminate claims in the name of 'global public good.' There is a need to distinguish clearly between such broad ideas as the 'international common good' or a 'good international outcome' and the more focused and restricted concept of international and global public goods. This is not a question of academic luxury. The potential financial and policy implications of such confusion can easily lead to a severe misallocation of scarce resources with particularly damaging consequences for the poorest developing countries.

2.3 Development assistance, international public goods and the question of additionality

The recent explosion of interest in international public goods has been intimately linked to issues involving official international development assistance. This linkage occurs against a 10-year backdrop of fundamental changes in the size, composition and distribution of financial resources to developing countries.

The decade of the 1990s saw a stagnation of Official Development Assistance (ODA) in nominal terms and a decline in real terms, as well as a huge increase in private flows (see Figures 2.1 and 2.2). Development assistance budgets were cut in practically all donor countries, while, at the same time, new demands began to account for a growing share of the diminishing pool of public funds for international cooperation. The result is an ever-increasing competition for the funding of post conflict reconstruction, humanitarian relief, assistance to refugees, debt forgiveness, support for democratic institutions, improvement of governance structures, assistance to transition economies, efforts to fight drug traffic and crime and a host of other new demands. This has been squeezing out resources allocated to fields that once were the main focus of development assistance, such as health and population, food and nutrition, education and training, small and medium size enterprises, technical assistance and balance-of-payments support.[16]

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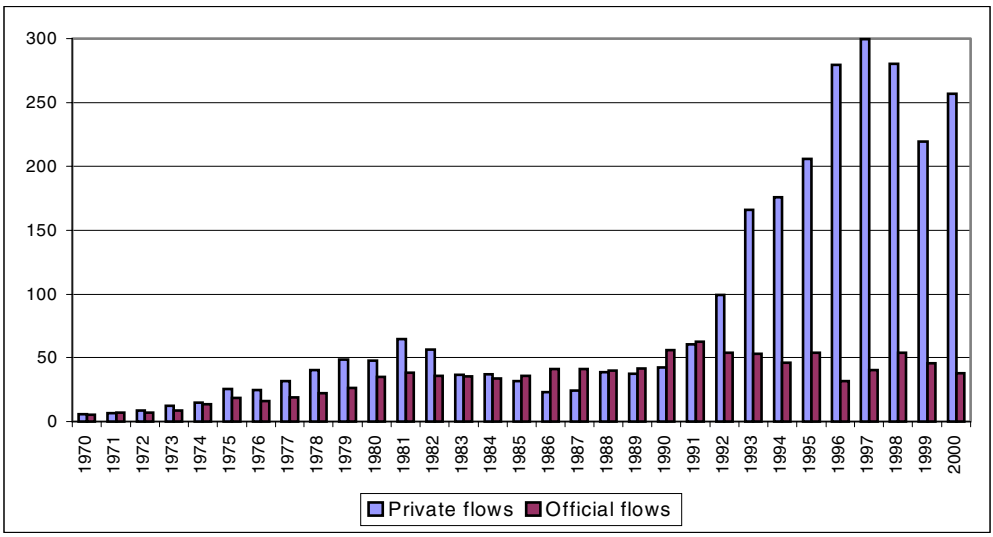
[16] In particular, the Heavily Indebted Poor Country (HIPC) initiative – intended by the international community to provide comprehensive debt relief to allow poor countries with good policies to escape form unsustainable debt burdens – has generated various concerns not only regarding the quality and sustainability of the post-HIPC growth but also about possible implications for concessional lending by the multilateral development banks. (See Bezanson *et al.* 2000.)

The 1990s also witnessed an unprecedented expansion of private inflows to developing countries. These increased seven-fold between 1990 and 1997 and came to dominate the international finance scene. This seismic financial shift was the result of two factors: the greater mobility of international capital associated with financial globalisation and the attitude of developing country governments. During the 1990s, developing countries welcomed foreign capital with open arms – a clear reversal of the prevailing attitudes of earlier decades. Policies, which discouraged foreign investment were repealed (e.g. ownership restrictions), and new policies were adopted to encourage foreign investors (e.g. property rights protection, tax stability guarantees). However, private flows were heavily concentrated in about a dozen emerging market economies, bypassing most middle income, and practically all poor countries. More recently, we have witnessed a spectacular retreat of private inflows to developing countries: net capital flows to emerging market economies fell from US$233 billion in 1996 to a mere US$2 billion in 2000.

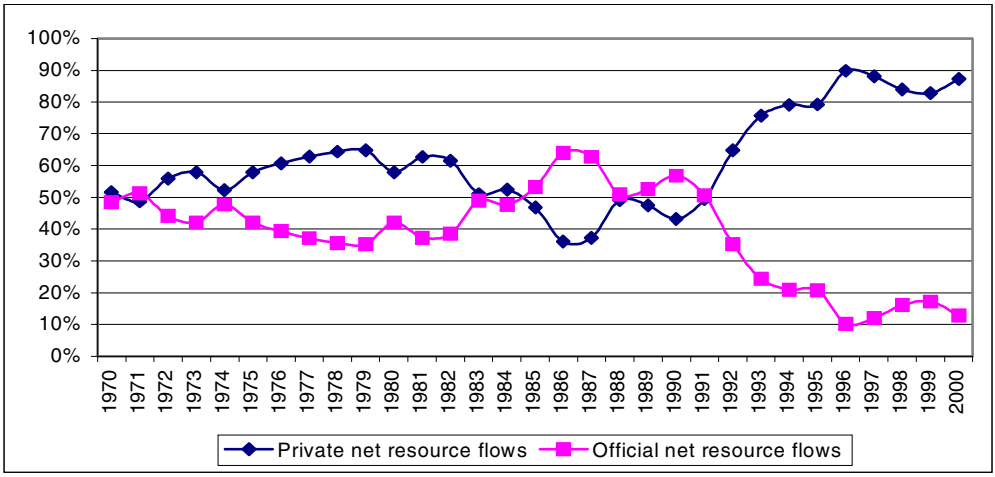
Figure 2.1 Official and private flows to developing countries (US$ billion)



Source: World Bank, 2001, *Global Development Finance 2001*, Washington DC

Against the background of these shifts and of the volatility of private flows, the financing needs of developing countries in general, and those of poor countries in particular, remain very high and vastly exceed available resource flows. One estimate of net external financing needs of developing countries, which was calculated on the basis of projected growth rates under two different assumptions (an inertial scenario and a poverty reduction target scenario), indicated annual average net external financing needs of all developing countries in the range of US$220 billion in the first case, and of US$450 billion in the second

Figure 2.2 Official and private flows to developing countries (percentages)



Source: World Bank, 2001, *Global Development Finance 2001*, Washington DC

case.[17] Another report prepared by the World Bank and the International Monetary Fund for the Development Committee provides estimates of the level of Official Development Assistance required to achieve the goal of halving poverty between 1990 and 2015. Focusing only on the 65 poorest developing countries that face an uphill battle to reduce poverty, the study considers a scenario with current domestic policies and another with improved policies. Additional ODA requirements amount to US$39 billion per year in the first case and to US$54 billion in the second case (Table 2.1).

The mismatch between the requirements for and the availability of development finance requires a re-examination of the reasons and motivations for development assistance, particularly in the current context where international public goods are being added to the growing list of demands on Official Development Assistance.

Motivations for development assistance have undergone various changes throughout the last half of the twentieth century. Political interests associated with the Cold War and altruism were the main reasons for establishing Aid Programmes in the late 1940s, but over time a more varied range of motivations for development assistance began to emerge. A gradual progression can be observed from narrowly defined notions of donor political and economic self-interest – complemented by moral concerns and altruistic motives – to broader conceptions of the common interest and the stability of the international system. A major change came at the end of the 1980s, with the end of the Cold War and the fading of national security interests as a motivation for development assistance. The tragic events of 11 September 2001 (World Trade Centre attacks in New York) have

[17] See Annex F, prepared by Ricardo Gottschalk, in Bezanson *et al.* (2000).

Table 2.1 Illustrative annual funding requirements to halve world poverty by 2015 (US$ billions)

	Current funding levels (1999)	Additional funding per year to halve poverty by 2015	
		Current policies	Improved policies
43 uphill countries with good policies*	15	39	39
22 uphill countries with poor policies*	3	Not available	13
88 other developing countries**	40	–	–
Total ODA	58	39	52

*Comprises 65 developing countries facing an 'uphill' struggle to reach poverty reduction goals where aid would make a difference, provided there is a sound policy foundation. (This category largely overlaps the IDA-only group of countries plus Pakistan, Nigeria and Zimbabwe.)
**Comprises 88 countries whose ability to reach the poverty goal does not depend on ODA (mostly middle-income countries).
Source: Development Committee 2001a: 5

rekindled the interest in national security as a potential motivation for development assistance; albeit in a radically different manner from that which prevailed during the four decades of Cold War, which ended in 1989, and during the last decade of the twentieth century.

As a consequence, the 1990s witnessed many efforts aimed at establishing new rationales to revive the flagging interest of most donor countries in providing financial aid. Among these is the new 'international public goods' rationale for development assistance, which argues that it is in the interest of developed countries to finance the provision of international and global public goods that benefit their own constituencies. This is seen as a different motivation from those that evolved from the 1940s to the 1980s, and in principle should lead to new sources of finance to ensure the provision of such goods. In a context of declining Official Development Assistance flows, this is viewed as an attractive option for rekindling the interest of donor countries in development cooperation.[18] Indeed, according to some recent estimates, as much as 15 per cent of total annual ODA resources are now assigned to international public goods-related purposes (United Nations 2001a).[19]

[18] Kaul *et al.* (1999: 451–2) argue that donor countries should assist developing countries, not only because they are poor and it is right to do so, but also out of self-interest, because this would enable them to make their own contribution to the provision of essential international public goods.
[19] This UNDP estimate of the amount of ODA allocated to global public goods is at variance with the calculations of the World Bank (see Table 3.2), which indicate that around 9 per cent of aid goes to core global public goods and another 20 per cent to complementary activities at the national level that allow to consume such goods. This underscores the importance of harmonising criteria to estimate how much is spent in the provision of international and global public goods.

It is important not to oversimplify, for motives are indeed varied and complex. Table 2.2 summarises the main motivations for providing development assistance at the beginning of the twenty-first century. The first group of motivations refers to international solidarity and religious proselytism, which have always been and still are present. The second comprises narrow and enlightened self-interest, linked to security, political and economic issues. The third set of motivations, which has become highly visible during the late 1990s, is linked to the provision of international and global public goods. These motivations are present to different degrees in donor countries and the emphasis on one or another varies over time, usually in response to changes in government.

Table 2.2 Motivations for development assistance

International solidarity and religious motivations

Altruism, ethical and humanitarian concerns, which highlight the moral obligation of donor countries to assist the poor in developing countries:

- alleviate human suffering and express solidarity with fellow human beings
- helping to cope with natural and man-made disasters through humanitarian and emergency relief.

Religious proselytism:

- desire to win converts to a particular faith and to spread the word with a missionary seal.

Narrow and enlightened self interest

Strategic and security interests, which respond to geopolitical and military considerations of donor countries:

- at the national level, which justify aid to developing countries of specific geopolitical importance to the donor country
- at regional level, which considers the interests of regional alliances or treaties.

Political interests, which focus on obtaining political support for foreign and domestic policies:

- with foreign constituencies (through support to former colonial territories and other areas with special historic and cultural ties to the donor country, aid to obtain international political recognition and support)
- centred on domestic constituencies (obtaining the support of immigrant lobbies and ethnic groups of foreign origin in the donor country).

Economic and commercial interests, which emphasise direct commercial and financial benefits to the donor country:

- benefits may include export expansion, employment generation, support of domestic producers (through food aid); greater security for investments in developing countries, securing access to resources (oil, strategic minerals); obtaining access to a pool of highly qualified potential migrants (through fellowships), and creating demand for exports in the future (through technology transfers).

Provision of international and global public goods

Emergence of regional and global problems, which concern both donor and recipient nations and require the provision of public goods:

- environmental sustainability has become a major concern of donors because global environmental threats (global warming, destruction of the ozone layer, loss of biodiversity, tropical deforestation) affect developed countries directly

- world population growth and imbalances, as well as health threats (AIDS, epidemics), are now seen as global problems requiring financial and technical assistance from donors
- international cooperation and the support of donors is necessary to avoid 'public bads', such as crime, drug traffic and terrorism at the regional and global levels.

Maintaining stability of the international system, which aims at securing a stable world order to foster the long-term interests of donor countries:

- maintaining political stability by preventing and containing local and regional conflicts, and by promoting the spread of democracy (supporting peace-making and peace-keeping initiatives, monitoring and supervising elections, help to strengthen democratic practices and institutions)
- Ensuring world economic stability through policy reforms in developing countries, and through measures to avoid major disruptions of international finance and trade (provide funding to help defuse debt crisis, e.g. Mexican peso collapse, East Asian crisis)
- Maintaining social stability in the developing regions to prevent international migrations (programmes to reduce population growth, combat poverty, promote human rights, improve the situation of women)
- Showing the willingness of rich countries to accept responsibility for assisting the less fortunate in a global society
- Helping developing countries to improve their participation in international agreements to make them more equitable, stable and effective.

Source: Adapted from Sagasti and Alcalde (1999: 145)

The tradeoffs and complementarities between financing development assistance programmes geared primarily to domestic needs and financing the provision of international public goods, have become the subject of discussion, research and dispute. In some cases, developing country priorities may not coincide with the activities required to provide an international public good, and donor efforts to finance it could be perceived as an imposition that diverts scarce development assistance to programmes considered less important. From another perspective, the international public goods agenda may be seen not only as a complement, but rather as critical for the effectiveness of national development efforts. This would be the case when dealing with cross-border problems and issues that cannot be addressed by individual and uncoordinated initiatives at the national level, and which affect developing countries as much, or more than the developed ones and could wipe out development achievements.

Whether financing international public goods and national development programmes involve tradeoffs or complementarities, depends to a large extent on whether funds assigned to address regional or global concerns are additional to resources allocated to development assistance in general. One approach, proposed by Kaul (2001) is that line ministries in donor countries, e.g. the health, finance, environment, agriculture and research ministries, should finance directly the provision of international public goods, with resources that should be allocated separately and beyond what is consigned in the ODA budget. In this way, motivations for development cooperation, based on an international and global public goods approach could be seen as an area where the other two sets of motivations, international solidarity and enlightened self-interest, converge and reinforce each other.

2.3.1 The question of 'additionality'

Much of the argument in favour of an international public goods approach to development assistance, hinges on whether it will eventually help to mobilise new financing that could compensate the downward ODA trends. This is a debatable proposition, given that during the last decade of the twentieth century, calls for supplementary development assistance funds for new tasks were not met with much success. The Earth Increment for the International Development Association (IDA) agreed at the Rio UN Conference on Environment and Development in 1992, failed to materialise. Most analysts agree that donor contributions for the Global Environment Facility have not been additional and there is widespread scepticism on whether there will be additional financing for the Heavily Indebted Poor Countries (HIPC) initiative. Therefore, advocacy of financial resources for global public goods may end up reducing the amount of ODA available for the national development priorities of developing countries (see Box 1.1).

In order to begin approaching the question of *additionality* in a systematic manner, it is necessary to separate resources earmarked for international public goods from those geared to traditional development assistance programmes. This would allow keeping track of resource allocation patterns over time between these two categories, and implies identifying clearly the resources assigned to international public goods in the reporting systems for development assistance. However, current data on flows to developing countries do not permit this, and painstaking efforts – coupled with some heroic assumptions – are required to reconstruct how much of the total official resource flows, both from the aid budget and from the budget of other ministries and agencies, have been allocated to the provision of international and global public goods (for an attempt, see Morrissey *et al.* 2001a).

But behind the information reporting and statistical problems associated with the question of additionality, there are more difficult conceptual and political issues. For example, a senior policy-maker and negotiator contacted during the conduct of this study, made the following remarks on this matter:

> … the notion of additionality is very difficult to pin down. It begs the question: additional to what? Is 'additionality' an increase from one year to another in the budget for development assistance? Should nominal or real allocations be used? There is no agreed definition of additionality and I once identified eight different uses of the term. Most countries do not, as the Nordics do, have a development budget. In these cases ODA is what adds up in their budgets that can be included in the Development Assistance Committee reports. Additionality is a beautiful concept in theory (and political rhetoric) but a bureaucratic nightmare in terms of follow-up.

In addition, the future prospects for development assistance in general do not look very bright, although there are some encouraging signs from European countries and possibly from emerging donors. This has important implications for the question of whether it would be possible to raise additional resources from donor countries to support the provision of international and global public goods. For example, Japan plans to cut its development assistance budget for fiscal 2002, by 9 per cent, and the United States aid budget represents at present just 0.1 per cent of GDP – the lowest proportion of the major developed countries – with rather uncertain prospects for significant increases in

the near future. Also, the US aid budget remains highly skewed in favour of countries considered of strategic importance (Israel, Egypt and, more recently, Pakistan), and some proposals to increase US development assistance (e.g. that of Representative Jesse Helms in early 2001) would require that additional resources be delivered through 'faith-based' and other private organisations. Therefore, in the absence of major changes in development assistance policies, it seems rather unlikely that the United States and Japan will provide additional resources to finance the provision of international and global public goods.

Moreover, in the context of the negotiations for the thirteenth replenishment of the International Development Association (IDA) at the World Bank, the United States government has proposed that, in addition to providing substantive debt relief through the Heavily Indebted Poor Countries (HIPC) initiative, the multilateral development banks transform half of their loans to the poorest countries into grants. This would have very serious implications for IDA and the concessional windows of the regional development banks, and has been opposed by virtually all other donor countries. While the US argument has been primarily that loans to poor countries make sense only for projects and programmes that produce economic returns, and that grants should be used for social programmes, this would in effect turn multilateral development banks into aid agencies, distorting the delicate balance they must strike between their financing and development functions (Bezanson *et al.*, 2000). In addition, moving to a grant rather than a loan mode would limit the amount of resources of these concessional windows by reducing reflows, and could lead to a breakdown of the discipline associated with having to pay back a loan (even if it is long-term and has a very low interest rate).

While the US proposal to shift 50 per cent of concessional lending to grants is framed in general terms, a 'global public goods' argument has been used by World Bank officials to justify a move in the direction of substituting a portion of IDA loans for grants. A carefully worded phrase (but no less significant) in a recent World Bank report raises this possibility very clearly:

> …discussions have been initiated with IDA deputies to explore a carefully limited expansion of IDA's grant capability, including for public goods-related purposes with especially strong impact on poverty reduction. Within the basic framework and discipline of a lending relationship, the IDA-13 discussions may lead to agreement on additional flexibility to deal with these issues. (Development Committee 2001a).

Translation: the International Development Association (IDA), which has been the World Bank's main vehicle to provide low interest, long-term loans to the poorest developing countries for their own development purposes, is likely to use part of its resources for grants to finance the provision of global public goods.

But, the situation with regard to development assistance and to the financing of programmes to address global concerns appears to be rather different in the United Kingdom and other European countries. For example, the UK government has made a commitment to boost aid to 0.33 per cent of GDP in 2003–4, and is also planning contributions to special funds that could be seen, in some way or other, as related to global public goods. In early 2001, the British government proposed to create a fund to guarantee a market for cheap vaccines for childhood diseases, another fund for primary education in Commonwealth countries and also signalled its intention to participate in

a trust fund to provide medicines to poor developing countries (this trust fund would be set up in coordination with the Italian government and with the participation of private corporations). Coupled with the disposition of other European countries to expand their development assistance budgets to deal with issues of global concern, with the establishment of the United Nations HIV/AIDS global fund, and with the preparatory process of the International Conference on Financing for Development that will take place in 2002, these are encouraging steps forward that could eventually lead to additional resources for development assistance in general, and for international public goods in particular.

This second section of the study has examined three areas: (1) the main features of the concept of public goods, (2) the emerging fractured global order and (3) the major changes that development cooperation has experienced during the last decade of the twentieth century. These three sets of concepts and practices have come together in the current debates on the definition of global public goods and how to provide them. The relatively short history of these debates is marked by unusual combinations of consensus and controversy, pessimism and high expectations, and of political posturing and genuine proposals; all of these against the backdrop of renewed interest in global issues that affect most of humanity, and are of concern to the environmental, cultural, equity and security implications of globalisation.

Of particular importance are the ways in which the current debates on globalisation affect the future prospects for development cooperation and the financial flows associated with development assistance. The growing prominence of issues and concerns that potentially affect most of humanity and future generations, added to the questioning of the effectiveness of development assistance and the stagnation of aid flows, is changing the manner in which development cooperation is perceived, carried out and financed. Whether these changes are likely to continue and become a permanent feature of the international development scene, and what their consequences would be for the vast majority of the world's poor, are some of the most contentious aspects of the current debates on international and global public goods.

3 A conceptual framework for examining the provision and financing of international and global public goods

3.1 Key features of international and global public goods

The confusion and ambiguities that have become evident in discussions linking international and global public goods and development cooperation indicate the need for greater clarity and a reasonable level of agreement on a conceptual framework. This appears now as a precondition to informed policy discourse, to an understanding of what are (and what are not) global public goods, which ones should be given priority and how best to provide and finance them. The problems associated with elaborating such a framework, however, are formidable. The conceptual apparatus of international public goods is influenced, not only by intellectual perspectives deriving from economics, political science and international relations, but also by the values, aspirations interests and relative power across a wide variety of different actors.

This third section attempts to respond to this challenge and offers a conceptual framework to examine the provision and financing of global public goods. It draws on and recapitulates the ideas outlined in the preceding sections.

The first problem is to define what exactly is a 'global public good'. As indicated in section 2.1, the theory of public goods offers only very limited assistance in arriving at meaningful definitions that are also useful to policy choices. In reality, public goods are rarely 'pure' and, in practice, non-excludability and non-rivalry are attributes that characterise a public good, to varying degrees (this is what gave rise in the economic literature to the concepts of 'impure' and 'mixed' public goods). Thus, a line has to be drawn, somewhat arbitrarily, to define how much of these two features are required for a resource, service or commodity to be considered a public good.

The definitions of global public goods currently used by two international organisations, the United Nations Development Programme and the World Bank, place different emphasis on characteristics such as excludability and rivalry (see Box 3.1). While UNDP stresses these two attributes of global public goods and adds a rather stringent requirement for its geographical and temporal reach, the World Bank does not mention excludability and rivalry, and focuses instead on cross-border spill-overs and on collective action involving developed and developing countries.

Also, the collective action problems (free-riding, prisoner's dilemma, tragedy of the commons) that are inherent to public goods in general apply to international public goods to an even larger extent. Even if there is general agreement that the potential gains from international concerted action are great, there is no supranational government authority to devise and impose solutions that are the norm at the national level (e.g. taxation, regulation, market creation).[20]

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[20] In an often-quoted paper, Charles Kindleberger (1986) has noted that 'the tendency for public goods to be underproduced is serious enough within a nation bounded by some sort of social contract, and directed in public matters by a government with the power to impose and collect taxes. It is … a more serious problem in international political and economic relations in the absence of international government.'

Box 3.1 Two definitions of global public goods

United Nations Development Programme

'Global public goods must meet two criteria. The first is that their benefits have strong qualities of publicness, that is they are marked by non-rivalry in consumption and non-excludability. These features place them in the general category of public goods. The second criterion is that their benefits are quasiuniversal in terms of countries (covering more than one group of countries); people (accruing to several, preferably all, population groups), and generations (extending to both current and future generations, or at least meeting the needs of current generations without foreclosing development options for future generations). This property makes humanity as a whole the *publicum* or beneficiary of global public goods' (their emphasis).*

World Bank

'… global public goods are commodities, resources, services – and also systems of rules or policy regimes with substantial cross-border externalities – that are important for development and poverty-reduction, and that can be produced in sufficient supply only through cooperation and collective action by developed and developing countries. … this approach involves the idea of both cross-national benefits, and of cross-national collective action to achieve them … In practical terms, the determination that the development community should work cooperatively to produce a desired global public good also involves consideration of how action should be implemented and how collective financing can be employed to ensure the public good is not undersupplied' (their emphasis).**

'… an important distinction is that between *core* and *complementary* activities. Core activities aim to *produce* international public goods. These activities include global and regional programs undertaken with a transnational interest in mind, as well as activities that are focused in one country but whose benefits spill over to others … Complementary activities, in turn, prepare countries to *consume* the international public goods that core activities make available – while at the same time creating valuable national public goods'.***

*Sources:**Kaul *et al*. 1999: 2–3; **Development Committee 2000: 2; ***World Bank 2001a: 110.

Moreover, the range of spill-overs across countries can vary significantly. This begs the question of how 'international' a public good must be before being considered as a global public good. It is obvious that the broader the range of spill-overs the more 'global' a public good would be.

There have been several important efforts to introduce greater conceptual clarity into this situation. They involve classification schemes that categorise public goods along the three dimensions of range of spill-overs, degree of excludability and degree of rivalry, and also along other dimensions such as sector, aggregation technology, type of benefit, and whether the public goods are tangible or intangible (see Annexes A and B). The range of goods, services and outcomes that have been included in these classification schemes is large and it continues to expand. From the perspective of this study and as a first

approximation, international and global public goods can be grouped into three general categories: (a) those public goods related to the *international and global commons*, which are associated with some physical or biological underlying phenomena; (b) those related to *international and global policy outcomes*, which are primarily the result of political, economic and social processes, and (c) those in which the dominant component is *international or global knowledge* in its various forms (see Table 3.1). Although all global public goods may be placed, to varying degrees, in two or even three of these categories, one category appears dominant for each of the goods listed.

The transition from acknowledging that a good, service or outcome is desirable, to declaring that it is a 'global public good' is not straightforward or automatic. It is heavily influenced by public awareness and political decisions, and requires collective action at the level of the international community (which includes not only national governments, but also private corporations and civil society organisations). It also begs the question of 'desirable for whom?' Nevertheless, the outlines of a broad consensus is emerging around the fact that 'global public goods' must be related, in some form or another, to world-wide poverty reduction, and to a more equitable distribution of the benefits of social, economic and technical progress. Indeed, it has been suggested that achieving equity at the international level and between generations may be considered as a global public good (Rao 1999). Thus, the contribution of a particular good, service or outcome to poverty reduction and to improvements in international equity could be used as one of the main criteria to decide on whether it should be considered as a 'global public good'.

Moreover, given that global public goods, or indeed any commodity, resource or service, has to be ultimately produced, utilised or provided by some individual or agent in a specific location, it is necessary to specify how far down the continuum from global to local to draw the line between what is a 'global public good' and the host of regional, national and local activities and policies that are necessary for it to materialise. There is also the need to specify the extent to which supranational entities are supposed to arrange for the provision of the global public good, and to what extent should they intervene in regional, national or even local affairs to ensure this happens.

Table 3.1 Examples of issues that have been proposed by various authors as international and global public goods

Related to the international and global commons
Reducing greenhouse gases emissions that lead to global climate change
Maintaining the evolutionary resilience provided by biodiversity
Protecting the Ozone layer
Reducing acid rain
Curbing air pollution
Reducing and safely disposing of nuclear and toxic waste
Preventing and reducing desertification
Controlling and reversing soil erosion

Conserving nature parks
Ensuring global water supplies and preserving watersheds
Maintaining access to and operating waterways and transportation networks
Maintaining the stock of global fisheries
Maintaining access and regulating the exploitation of seabed resources
Ensuring the peaceful uses of outer space
Operating and maintaining communications satellites in geostationary orbit
Operating and maintaining remote-sensing satellites
Preserving cultural heritage
Related to international or global policy outcomes
Ensuring financial stability, avoiding financial crisis
Preventing deadly conflicts
Curbing the international spread of organised crime
Improving global equity
Reducing world poverty
Ensuring equitable labour standards world-wide
Preventing nuclear accidents
Preventing the spread of infectious diseases (e.g. HIV/AIDS, tuberculosis, malaria)
Providing treatment to those affected by HIV/AIDS virus
Expanding immunisation to cover all children in the world
Ensuring global food security
Ensuring good governance of international and global institutions
Expanding international trade and integration
Ensuring the widest possible participation in the design and operation of international and global public goods regimes
Studying the effectiveness of arrangements for the provision of international and global public goods, and disseminating the results widely
Related to international or global knowledge
Conducting research and providing statistical information on social, economic, political, scientific, technological, environmental and cultural indicators (among others)
Preserving biodiversity for its potential uses to benefit humanity
Agricultural research and extension
Generating and disseminating knowledge and technologies relevant to developing countries
Creation of vaccines for diseases endemic to tropical areas
Obtaining information for weather monitoring and forecasting

Source: Compiled from various papers, reports and books mentioned in the bibliography.

This, in turn, involves complex negotiations, either in formal settings or through informal means, in order to: (1) establish explicit or implicit rules and regulations for interventions by supranational entities; (2) create new or utilise existing organisations in the provision of the good; (3) mobilise financial resources to pay for the activities associated with the production of the global public good; and (4) define operational policies and procedures, which should ultimately influence the actions and behaviour of national and local agents. Without such arrangements, which imply designing and putting in place a delivery system (see section 3.2), declaring that something is a 'global public good' would just be an empty gesture.

The extrapolation of the rather precise concept of 'public good' from economics to broader contexts, specifically those in which development policies and interventions take place, requires considerable conceptual stretching. The actual delivery of an international public good involves both 'core' activities at the global and international levels in a restricted sense, and a much broader set of 'complementary' actions at the national, regional and local levels. Core activities would be the primary responsibility of the international community of nations, associations and corporations, while the complementary activities would fall under the purview of national entities. Drawing a line between these two sets of activities has numerous operational and financial implications. One of the main concerns at present is that resources that are now allocated to development assistance (which overlap to a large extent with *complementary* activities) will be diverted to finance the provision of global public goods. Moreover, from a global equity perspective, and also because of self-interest, the rich countries should play a central role in the financing of the *core* activities associated with the provision of global public goods. These questions will be further examined when describing an 'idealised international public goods delivery system'.

An example of these difficulties is the provision of treatment for HIV/AIDS infected persons. No reasonable individual would question as a desirable outcome the provision of adequate treatment to persons infected with HIV/AIDS. There is, however, considerable disagreement on the extent to which such treatment should be approached on the basis of considering it a global public good. Some advocates argue that the global public good refers only to the knowledge about how to produce treatment drugs or vaccines, and should thus be made available at low or no cost to those countries and firms that can produce it for local consumption, and even for export to other developing countries. Others are proposing that the actual delivery of the drugs to persons who would benefit from them constitutes a global public good, which would not require knowledge to be disclosed, but which implies putting in place arrangements for purchasing, distributing and administering treatment drugs to all infected persons.

Finally, there are those who argue that, however terrible and devastating the disease may be for the HIV/AIDS affected groups, this is simply not a global problem, that there are other health priorities for developing countries, and that these concerns are primarily local and national and do not qualify for the label of 'global public good'.

Similar concerns emerge with the conservation of biodiversity, because of its importance for evolutionary resilience, the provision of ecosystem services and the potential for leading to new drugs and other useful products. However, biodiversity is a highly localised phenomenon, with a few 'biodiversity hotspots' accounting for a very large share of the diversity of living organisms in the planet. Countries where such sources of abundant

biodiversity are located could well argue that it is up to them to use this natural resource as they see fit. The Global Environment Facility (GEF) has been confronting since its inception, the issue of which proportion of biodiversity conservation projects should be financed through its grants, and which part should be covered by national or local organisations (or by development assistance). The difficulties involved in drawing a precise distinction are enormous and, after a decade of experience, the GEF continues with efforts to refine its definition of what are called 'incremental costs'. This concept is used to identify those aspects of a biodiversity project that generate global benefits, and are thus eligible for GEF funding, separating them from the financing of activities that produce primarily local and national benefits (Kumaran *et al.* 2001).

Determining what is the global public good associated with the global concern of abating climate change is equally problematic, as the protracted negotiations of the International Panel on Climate Change and of the Kyoto protocol have shown. Despite a significant degree of agreement on the causes and potential solutions to the problem, the science that underpins policy debates has been subject to repeated challenge by those claiming that climate change is not a problem at all, not as serious as is often claimed, or even, beneficial. There is even greater disagreement on which countries should begin reducing their emissions and by which amounts, with the United States and the large developing countries (China, Brazil, India) taking radically opposite views on this matter. The fact that emissions are produced by a huge number of individual agents all over the world, and that actions to reduce emissions or to absorb greenhouse gasses must also be dispersed throughout the planet, make the production of this global public good – and establishing a clear differentiations between the core and complementary activities – a daunting proposition.

Decisions on what is a public good in the fields of international peace and security, and of global financial stability face similar problems. What the Carnegie Commission on Preventing Deadly Conflict calls 'operational prevention' – preventive diplomacy, information gathering and possibly the maintenance of a UN rapid deployment force – can be considered as a global public good because, in addition to having significant cross-border spill-overs, it is to a large extent non-excludable and non-rivalrous. This is not the case of 'structural prevention' (consisting mostly of development interventions in a broad sense), and of conflict resolution and post-conflict reconstruction, which are region or country specific and are to a larger extent excludable and rivalrous. With regard to financial stability, agreeing on financial codes and standards, sharing information on financial flows and on the situation of financial institutions, and even establishing a facility to assist countries in financial distress, might be considered as a global public good for the same reasons. In contrast, actual financial rescue efforts in one or another country would not qualify as such.

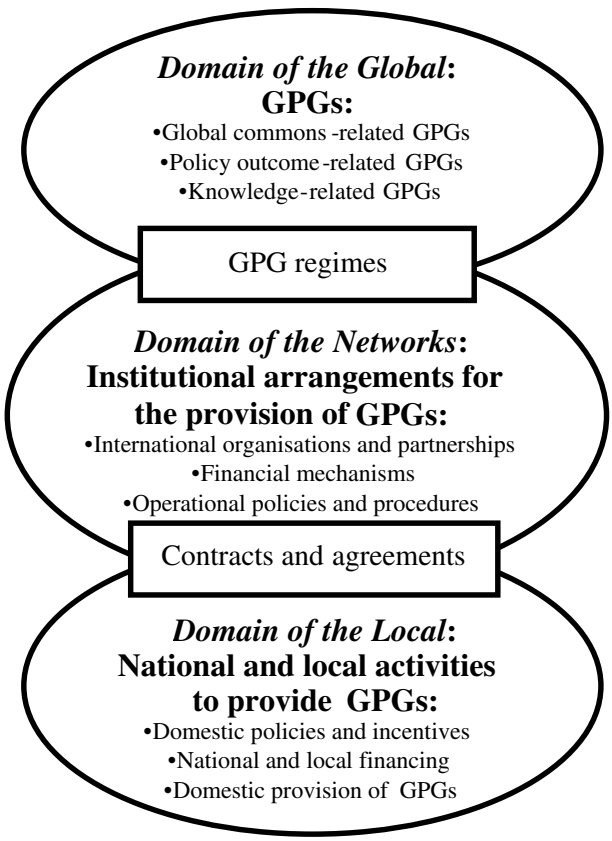
Additional problems emerge, because knowledge, awareness and political will regarding international issues and global concerns change over time. Public awareness and political decisions move issues from the fringes to central stage (for example, providing treatment for HIV/AIDS, maintaining financial stability), while advances in technology create new possibilities for providing global public goods (emergence of Internet, use of geostationary orbits for telecommunications), and the results of scientific research change our understanding of global phenomena (greenhouse effect, thinning of the Ozone layer).

Thus the class of global public goods has a dynamic character that defies any attempt to define, once and for all, what exactly it encompasses.

3.2 The structure of an idealised 'international public goods delivery system'

One way to integrate the various issues raised in the preceding section is to articulate what may be defined as an idealised 'international public goods delivery system'. Such an idealised construct can help to identify and place more clearly the elements that are necessary to provide a global public good. The structure of any existing international public goods delivery system can only approach the characteristics of the ideal, which can serve as a point of reference to examine how efforts to define and deliver a global public good evolve over time. While references throughout this section are made primarily to public goods at the global level, the idealised delivery system could also be applied to regional public goods.

Figure 3.1 Global public goods in a fractured global order



The components of an idealised international public goods delivery system can be placed in the three domains of the fractured global order (section 2.2). As shown in Figure 3.1, global public goods, whether related to the global commons, to global policy outcomes or global knowledge, belong in the *domain of the global*. The host of institutional arrangements, including international organisations and partnerships, supranational financial mechanisms, and operational policies and procedures that are in charge of ensuring that the global public good is made available belong in the *domain of the networks*. The multiplicity of national and local activities related to the actual production and consumption of global public goods, which include domestic policies and incentives, national and local financial mechanisms, and the activities of government agencies private firms, civil society organisations and individuals, belong in the *domain of the local*. The conventions, treaties and protocols that formalise agreements for the provision of a global public good – that is the global public good regimes – mediate between the first two domains. Contracts, agreements, memoranda of understanding, reversal notes and other lower level legal instruments mediate between the second two domains.

Thus, for all practical purposes, determining that something is a 'global public good' must go hand in hand with identifying the 'delivery system' associated with it.

Figure 3.2 presents the components of what would comprise an idealised system for the production, delivery and consumption of international public goods. Drawing from this, the components may be summarised as follows:

3.2.1 Knowledge, public awareness and political decision

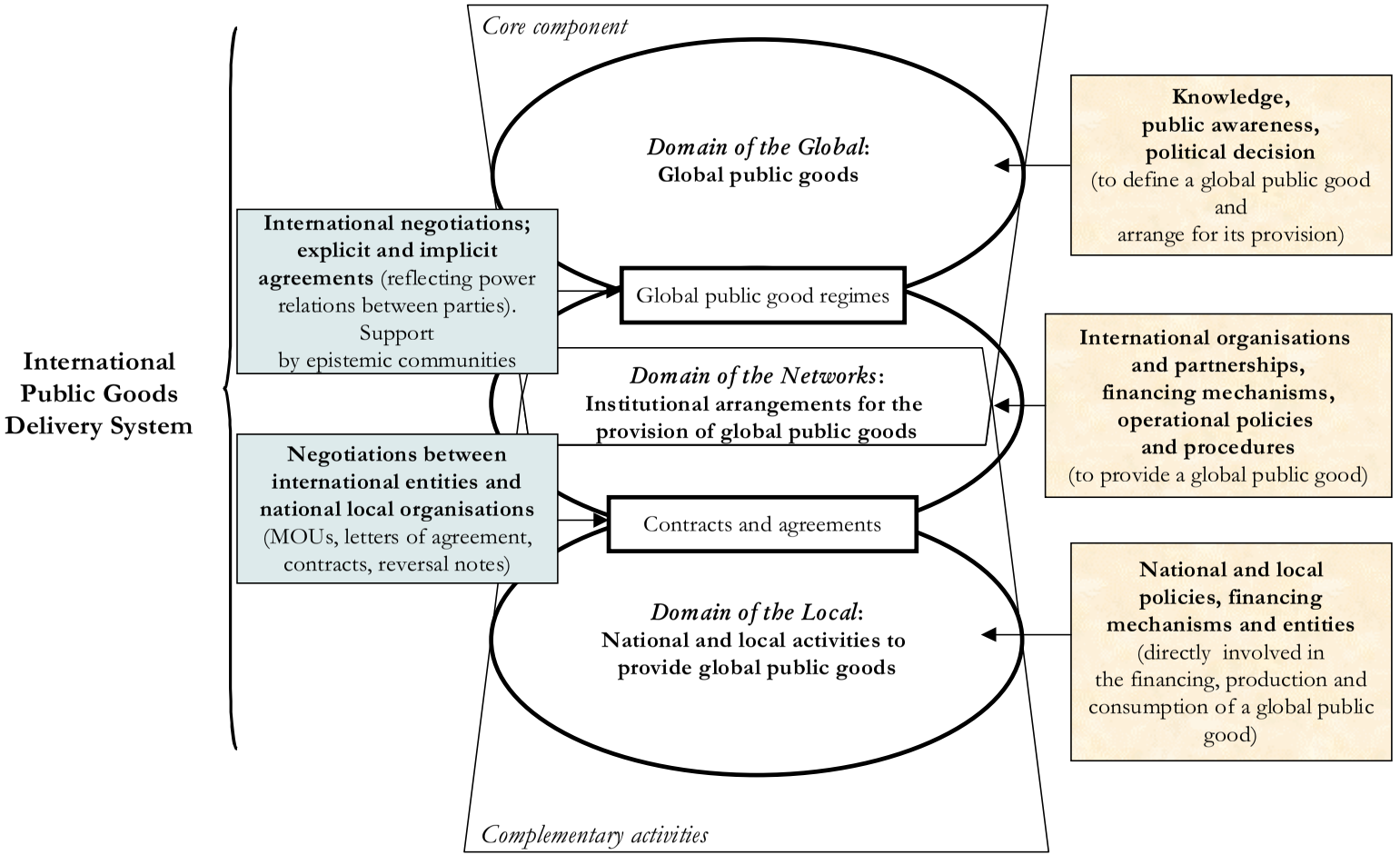
Declaring that something is a global public good depends primarily on the *knowledge* about its characteristics and effects (impact, consequences, reach, excludability, rivalry), the extent of *public awareness* that generates pressures to ensure its availability, and on the *political decision* that providing the global public good merits concerted actions by the international community. Without establishing all the arrangements required to make it available and facilitate its consumption, the declaration that something is a 'global public good' remains empty rhetoric.

This is where all the value and interest considerations appear in full view. If the concept of global public goods is to be of any practical use, it must be underpinned by a broad political consensus that there exists a set of goods, services and policy outcomes whose provision at the global level is desirable for the international community of nations, private firms and civic associations. Solidarity, equity, altruism and humanitarian values, which are all closely related to poverty eradication, must guide the process of achieving such consensus, complemented with concerns regarding the need to address global problems and to maintain the stability of the international system.

3.2.2 Global public goods regimes

Regimes have been defined as 'norms, rules and procedures agreed to in order to regulate an issue-area' and as 'arrangements peculiar to substantive issue-areas in international relations that are characterised by the condition of complex interdependence' (Haas 1980, 1982). There is a well-developed body of theory and empirical studies on the creation, evolution and functioning of international regimes, which can readily be brought

Figure 3.2 An international public goods delivery system



to bear in the design and operation of global public good regimes (Box 3.2). Questions such as the ways in which regimes operate, the factors that condition the emergence of a regime, issue-linkages and time dimensions, and the role of knowledge in the creation and evolution of a regime have been dealt with extensively in the literature. For some scholars the analysis of regimes 'cannot be separated from the broader study of international

Box 3.2 International regimes and global public goods

Scholars working in the field of international relations define regimes, at one extreme, as any form of 'patterned behaviour' stable over time, and at the other, as 'multilateral agreements among states which aim to regulate national actions within an issue area'. An intermediate approach considers that regimes are 'implicit or explicit principles, norms, rules and decision-making procedures around which actors expectations converge in a given area of international relations'. The theory and empirical study of regimes has generated many variations around these definitions, as well as different perspectives on how to design and operationalise them, as well as how to evaluate their performance and impact. Ernst Haas suggests that alternative views about regimes are 'a function of how one thinks about learning, the growth of human consciousness and about social evolution'. In this regard there are broadly three approaches to explaining the reasons why regimes form; the conditions in which they change, and the factors that make them more or less effective. The first of these are power-based theories, which emphasise the importance of a single power, or hegemon, in funding and supporting regimes with benign and coercive forms of leadership. Second, there are interest-based theories, which emphasise the importance of bargaining and institutional design to outcomes. Finally, there are knowledge-based theories, which underline the importance of expert communities in defining and generating cooperative responses to global problems.

Stephen Krasner has emphasised that regimes are more than just temporary arrangements that change with every shift in power or interest. Moreover, regime-governed behaviour must not be based solely on short-term calculations of interest, but must involve some sense of general obligation, such as reciprocity. A fundamental distinction is made between principles and norms on the one hand, and rules and procedures on the other. The first provide the basis defining characteristics of a regime, while the second operate within it. Thus, changes in principles and norms would imply changes of the regime itself, while changes in rules and decision-making procedures are just variations within regimes. The establishment of regimes requires deliberate action, but they are not considered as ends in themselves, but rather a means to achieve preferred or desirable outcomes at the international level.

A variety of factors converge to give rise and define the particular characteristics of an international regime. These include the interests of the actors involved in the issue, the use of political power in the service of the common good or of particular interests, the values and principles that influence the conduct of the actors, the customs and traditions that underpin their behaviour and their interactions and the types of persuasion involved in the negotiations. The literature on international regimes is rich with analyses of how different interests, asymmetric power relations, previous experience in other regimes, knowledge about the issues, and the process of negotiation itself, among other factors, affect the structure, main features and stability of the regime that emerges.

Issues are seldom dealt with in isolation, particularly when actors with different objectives wish to balance the results obtained in different negotiations for the establishment of regimes. This gives rise to issue linkage and to issue areas, which allow to balance and offset the results of individual negotiations and may thus lead to more equitable outcomes across issue areas and regimes. Similar considerations apply when a time dimension is introduced in the design of regimes, allowing to balance the interest of various actors that may be prepared to accept tradeoffs between benefits obtained and the time when they materialise.

Knowledge about the issue or issues under discussion plays a most important role in regime creation and evolution. Ernst Haas defines this knowledge as 'the sum of technical information and of theories about that information which commands sufficient consensus at a given time among interested actors to serve as a guide to public policy designed to achieve some social goal'. In his view, 'institutionalised collaboration can be explored in terms of the interaction between changing knowledge and changing social goals' (this will be readily apparent to those who have been following international negotiations on global climate change).

As in the case of global public goods, there have been many efforts to devise typologies of international regimes. From a global public good perspective, the theory and empirical analysis of regimes offers a rich source of material, both of conceptual and practical nature, which has to be fully integrated into the design of international public goods delivery systems.

Sources: Haas (1980, 1982); Krasner (1982); Haggard and Simmons (1987); Rittberger (1997); Young (1998).

'governance without government', which is one of the main issues involved in the design of international public goods delivery systems (Rittberger 1997).

While there has been debate about whether regimes refer primarily to explicit rules or to observed behaviour from which rules can be inferred, an idealised international public goods delivery system would include the conventions, treaties, protocols and other legal instruments resulting from negotiations to establish a global public good regime. In practice they would also include the explicit and implicit agreements, rules, regulations and patterns of behaviour that structure the interrelations between agents involved in the provision and consumption of the global public good. The nature of the interactions between the parties interested in its provision will influence the results of such negotiations and processes that lead to agreements. For both efficiency and equity reasons, it is important that all parties that are affected by, or are involved in, the production and consumption of a global public good, should have a stake in the design of a regime and in arranging for its implementation. What Kaul *et al.* (1999) have called the 'participation gap', i.e. the absence of fully representative forums, is one of the main problems facing the design of international public goods delivery systems.

The increasingly knowledge-based character of negotiations to establish global public good regimes – whether in climate change, production of vaccines and delivery of treatments for HIV/AIDS, biodiversity conservation, maintaining international financial

stability, or any other issue area – points out that negotiators, policy- and decision-makers are facing a growing number of issues of an increasingly complex and technical nature. As a consequence, they depend more and more on the support of scientists and professionals from many disciplines, working together in what have been called 'epistemic communities'. An *epistemic community* is defined as 'a network of professionals with recognised competence and expertise in a particular domain and with an authoritative claim to policy relevant knowledge within that domain or issue area' (Hass 1992). They now play major roles in 'articulating the cause-and-effect relationships of complex problems, helping states identify their interests, framing the issues for collective debate, proposing specific policies, and identifying salient points for negotiation'. As the differences in the capacity of developed and developing countries to generate and utilise knowledge have been increasing significantly over time and have reached abysmal proportions, the role of knowledge and the proper functioning of epistemic communities in the design of global public good regimes merit urgent attention.

Values, preferences, interests and judgments underpin the negotiations and decisions that lead to the creation of regimes and it cannot be expected that these will proceed or be made without conflict. Moreover, in complex systems, there may be two or more regimes that pull agents in different directions with regard to the provision of an international public good. For example, climate change mitigation regimes that seek to reduce carbon emissions may be in contradiction with tax and energy pricing regimes, particularly in the large developed economies, which contain incentives and subsidies for the use of fossil fuels. In addition, members of epistemic communities may differ from each other when referring to the extent, quality and interpretation of the knowledge that feeds into the discussions and negotiations for the creation of a regime. This was made abundantly clear in the case of the Kyoto Protocol within the framework of the International Panel on Climate Change. As a consequence, the design of regimes associated to international public goods delivery systems, should incorporate procedures for resolving conflicts between the members of the relevant epistemic community.

Global public goods regimes (which include, for example the Convention on Biodiversity and its complementary agreements, conflict prevention practices and rules in the United Nations, the international patent system and the intellectual property rights agreements) mediate between the domains of the global and of the networks. While international relations scholars would tend to include not only treaties, conventions and protocols in the definition of an international regime, but also international organisations, financing mechanisms and related policies rules and procedures, these are dealt with separately in the analysis of the international public goods delivery system proposed in this study.

3.2.3 International organisations and partnerships

Some intergovernmental organisation, specialised secretariat or partnership between public, private and civil society organisations, is required to carry out the provisions specified in the agreements that give rise to the global public good regime. This involves interpreting, administering, monitoring, enforcing and evaluating the performance of the various entities involved in the international public goods delivery system. Transgovernmental, transcorporate and transassociational networks of organisations, as

well as combinations of these, are gradually becoming the main vehicle for carrying out a variety of international activities and for providing international public goods.

Thus, the provision of global public goods requires the involvement of many different agencies, organisations and associations at the international level, which raises problems of coordination and management. While it may not always be necessary to create new entities, the provision of global public goods would require that existing institutions adapt their current practices and procedures to facilitate coordination and joint actions. It would also require achieving a sensible division of labour between all of these organisations (see section 4.2).

Partnerships between various institutions have become the norm at the international level. For example, at the end of the 1990s the World Bank was engaged in more than 200 international programmes or partnerships (World Bank 2001b). This institution defines partnership as 'a collaborative relationship between entities to work toward shared objectives through a mutually agreed division of labour' (World Bank 1998). According to the World Bank, the key to building a meaningful partnership is the specification of the shared objectives pursued; the agreement on the *modus operandi* to determine an appropriate division of labour to leverage skills and build on synergies and complementarities, and the establishment of mechanisms to assess success and make adjustments.

A growing number of organisations, programmes and activities have begun to focus on the provision of international public goods, and many are redefining what they have been doing for some time, using the label of 'global public goods'. Apart from raising the problem of identifying those activities that conform to a more rigorous definition of global public goods, this raises questions about the division of labour between institutions, and the related problems of coordination, collaboration and competition.

3.2.4 Financing mechanisms

The provision of international and global public goods requires that special resources be allocated to finance the whole range of activities involved in their delivery. A variety of activities, from raising public awareness and negotiating global public good regimes, to the performance of specific tasks at the local level that actually provide the global public good, need to be considered in the design of financial mechanisms. A growing number of contributions to the literature on development finance and on public goods are focusing specifically on the question of how to generate resources for the provision of international and global public goods (e.g. see Sandler 2001).

It is essential to separate clearly those resources allocated to development assistance in general, which would benefit primarily the recipient countries, from those used in the provision of global public goods, which would benefit developed countries at least as much as developing countries. The report of the High-level Panel on Financing for Development, chaired by the former President of Mexico, Ernesto Zedillo, (Zedillo 2001) has made it clear that the financing of international and global public goods should not come at the expense of development assistance flow, and particularly those directed to the poorest developing countries.

Financial arrangements for the provision of global public goods are located primarily in the domain of the networks, and in the same way as organisations, partnerships, operational policies and procedures, they overlap with other financial mechanisms geared

to the delivery of regional, national and local public goods. This is represented by the area in the middle of Figure 3.2. Section 3.3 examines in more detail the various options that are available for financing the provision of global public goods using the framework of an international public goods delivery system.

3.2.5 Operational policies and procedures

These refer to the different policies, decision-making procedures, regulations, codes and other rules internal to the organisations and financing mechanisms that are involved in the provision of a global public good. There is a great diversity of operational policies and procedures in the delivery systems for each of the global public goods. They are required for the consistent and effective application of the principles embodied and norms specified in the global public good regimes, and underpin the day-to-day operation of the network of institutional and financial arrangements that are part of an international public goods delivery system. These operational policies and procedures are placed in the domain of the networks.

3.2.6 Agreements and contracts

Mediating between entities placed in the domains of the networks and of the local in an international public goods delivery system there are many types of lower level legal instruments. These specify the terms of reference, obligations and rights of the national and local entities involved in the actual production and consumption of a global public good, and provide structure to their interactions with the international organisations and financial mechanisms involved in its provision. They could be, for example, grant agreements with foundations, memoranda of understanding with international agencies, loan contracts with international financial institutions, reversal notes between agencies in two countries, terms of reference for the performance of certain activities, among other instruments.

Questions such as conditionality and sovereignty, figure prominently in these legal instruments, which usually include procedures for the verification of compliance with the terms of the contract (e.g. to ensure that forests are maintained to absorb carbon emissions). As some advocates suggest that interventions to provide global public goods should reach down to the level of local entities (e.g. in the provision of treatments of HIV/AIDS), issues such as local versus international priorities, autonomy of national agencies, and dispute resolution procedures, emerge when negotiating these agreements and contracts.

3.2.7 National and local entities involved in the provision of a global public good

The last component of an international public goods delivery system refers to the government agencies, private firms, civil society organisations and individuals that are actually involved in activities that produce or consume a global public good.

In the last analysis, actions that make a reality the provision of such a good take place at this level in the domain of the local. Therefore, while regimes, organisations, financing mechanisms, operational policies and procedures, and contracts and agreements are

necessary to establish an international public goods delivery system, nothing would happen unless the behaviour of national and local entities is congruent with, and contributes to, the provision of the public good. Issues such as the evaluation of the impact of initiatives in the domains of the global and of the networks to arrange for the actual delivery of public goods, and of how to ensure that domestic policies and incentives generate changes in conduct that lead to the sustained production and consumption of a global public good, must also be examined here.

An idealised international public goods delivery system for a particular global public good would be made up of all of the elements indicated, which extend from the core component (upper trapeze in Figure 3.2) to the complementary regional, national and local activities linked to its provision and consumption (lower trapeze in Figure 3.2), operating in an efficient and sustainable manner. Yet, as Figure 3.2 suggests, the way in which these two sets of activities overlap and relate to each other is one of the crucial aspects in establishing arrangements for the provision of international public goods. The main question is: *How far to go down along the continuum from global to local activities in defining what is the core component?* The answer to this question will, in turn, determine which organisations and programmes should be involved in activities that belong the core component and, most important, *the way in which the provision of the global public good should be financed*.

A decision could be made to clearly separate the core component from the complementary activities of the international public goods delivery system, and to limit the financing arrangements associated with the global public good just to the core component (for example, to produce and guarantee the availability of HIV/AIDS drugs at a reasonable price). This would imply that regional, national and local entities would have to make their own preparations to finance and organise the complementary activities, although this would have to be done in close coordination with the entities in charge of the core component. Alternatively, a decision may be made that the core component of the global public good should incorporate the organisation and financing of the means to deliver it all the way down to the national and local levels (for example, to actually provide treatment for HIV/AIDS infected persons). In this case, the 'complementary activities' in the delivery system would overlap with and, in effect, would become part of the 'core component'; they would thus have to be included in the financial arrangements associated with it.

The advantages of using the conceptual framework of an 'idealised international public goods delivery system' should now be apparent. It identifies the elements that must be in place for a global public good to be defined, produced and consumed, and therefore allows assessment of what is missing in the case of a particular global public good, and how far it will be necessary to go in order to arrange for its provision. This conceptual framework also points out that there is no way of escaping values, interests and power relations in defining what is a global public good; that the knowledge of epistemic communities is critical to underpin such decision and to establish global public good regimes; that institutions and partnerships, financing mechanisms, and operational policies and procedures are required at the international level to facilitate the production of the global public good; and that all of the preceding arrangements would be, useless without the identification and involvement of national and local entities that will be in charge of actually producing and consuming the global public good.

3.3 Financing options for the provision of global public goods

The amount of resources allocated to international and global public goods broadly considered has undoubtedly increased during the last decade of the twentieth century, even though all the problems of defining them precisely conspire against obtaining accurate figures. Bearing in mind these limitations, the World Bank estimates that, during the mid-1990s, about US$5 billion was destined annually for the financing of core activities related to the production of global public goods, and another US$11 billion was allocated to the complementary activities necessary to consume it, which together amount to about 30 per cent of the US$55 billion of total Official Development Assistance (Table 3.2). Against these amounts, the Zedillo report estimates that between US$10 and US$20 billion per year are required to finance the provision of global public goods (Box 3.3).

The difficulties in estimating how much is actually used in the provision of global public goods are not only of definitional character and related to where the line between the core component and the complementary activities is drawn. They arise also because of the great variety of channels that are used in practice to finance international public goods, several of which have not been included in estimations of resource flows to finance global public goods.

The multiplicity of channels that are involved in, or are relevant to, an international public goods delivery system suggest the need for a systematic exploration of financing options. Figure 3.3 presents a scheme to begin such exploration. It consists of several questions that provide guidance to examine the range of financial mechanisms that have been used in practice or have been proposed. The framework applies primarily to the financing of the core component (the upper trapeze in Figure 3.2), and to a lesser extent to the complementary regional, national and local activities linked to the provision of the global public good (the lower trapeze in Figure 3.2).

Table 3.2 Sources of funding for core and for complementary activities related to international public goods (according to the World Bank). (Annual averages, 1994–98, US$ billions.)

	Global and regional funding		Country-based finance		
Purpose of funds	Foundations	Trust funds	Concessional	Non-concessional	**Total**
Core activities	1	2	2	–	5
Complementary activities	–	–	8	3	11
Total	1	2	10	3	16

Notes: (–) Indicates negligible or not applicable. *Core activities*, refer to international resource transfers for those activities undertaken with a transnational interest in mind, as well as activities that are focused in one country but whose benefits spill over to others. *Complementary activities* refer to official finance that funds national capacity and infrastructure to participate in the production and consumption of global public goods.
Source: World Bank 2001: 111–12, Table 5.1

Box 3.3 Global public goods and the high-level panel on financing for development

The Panel was established by the UN Secretary General in 2000 and chaired by the former President of Mexico, Ernesto Zedillo. In its final report, it welcomes the growing international concern with the supply of global public goods, but also cautions that the recognition of new needs has rarely brought with it additional funding. According to Panel estimates, 15 per cent of development assistance — about US$5 billion — is devoted currently to the supply of global public goods (whose provision often benefits donors more than recipients). At least US$20 billion per year — four times the current spending level — would be required to begin addressing the need for global public goods in a more satisfactory manner. The Zedillo report stresses that *it is imperative to separate finance for development and humanitarian assistance from finance for global public goods* and to provide adequate finance for each of these causes.

The Panel called for the international community to accept that it is in the common interest to provide stable and contractual resources for these purposes, which imply among other options, increasing and strengthening multilateral and bilateral development assistance, issuing Special Drawing Rights at the IMF, and exploring new sources of finance such as international taxes. In this regard, the Panel recognised the difficulties of establishing international tax schemes, for example a currency transactions tax (Tobin tax) or a tax on the consumption of fossil fuels (carbon tax), but nevertheless, with a longer- term horizon in mind, recommend exploring the feasibility of establishing such schemes, and in particular a carbon tax.

The report of the Zedillo panel summarises current estimates of resources allocated to the provision of what they considered as global public goods. These include:

- The cost of *peacekeeping* fluctuates widely, but in a typical year it has been costing about US$1 billion.
- The Secretary-General has estimated the cost of *dealing with the HIV/AIDS* epidemic at US$7 billion –US$10 billion a year. He is initiating the creation of a Global Fund for HIV/AIDS and Health, aimed at raising that amount plus another US$2 billion a year to supplement the fight against TB and malaria.
- The cost of *developing vaccines* can run into the billions of dollars, but at the moment there is little being done to develop vaccines of relevance specifically to developing countries, because these countries lack the purchasing power to buy the vaccines, even if they were available. The Panel endorses the suggestion that donors should establish a Vaccine Purchase Fund to guarantee substantial purchases of vaccines if these are developed. Such a fund would provide an incentive to undertake the necessary research. Estimates of its ideal size span a wide range, roughly from US$1 billion–US$6 billion a year.
- The *Consultative Group on International Agricultural Research* (CGIAR), some of whose centres played a key role in nurturing the Green Revolution of the 1950s and 1960s, spends some US$330 million a year on research into crops of relevance to developing countries. The rate of return on its activities is estimated to be very high and the primary beneficiaries are poor farmers; nonetheless, its budget has been squeezed in recent years.
- *Control of chlorofluorocarbon emissions* has proved not to be as expensive as at one time feared, and most of the costs are borne by individual industrial countries; the cross-border cash payments designed to compensate developing countries for joining the curb have amounted only to some US$1.2 billion so far.

- *Limiting greenhouse gases* will be an altogether more costly undertaking, if and when any serious effort is made in this direction. Since the scientific evidence needed to estimate the optimal restraint on greenhouse emissions is not yet available, it is not possible to estimate the cost of an optimal programme, but there is little question that it would be high. The bulk of those costs would fall on individual countries, and the main problem will be to allocate the burden fairly among them. But it is also likely to be desirable to devote substantial sums to pay some countries for undertaking activities that sequester carbon from the atmosphere.
- Regarding *biodiversity*, there appear to be no estimates available of the cost of mounting a serious effort to stem the continuing loss of plant and animal species, but that, too, would surely run into billions of dollars each year.

This brief review suggests that desirable spending on global public goods is certainly substantially greater than US$10 billion a year. A best estimate is that it may be of the order of US$20 billion a year.

Source: Zedillo (2001).

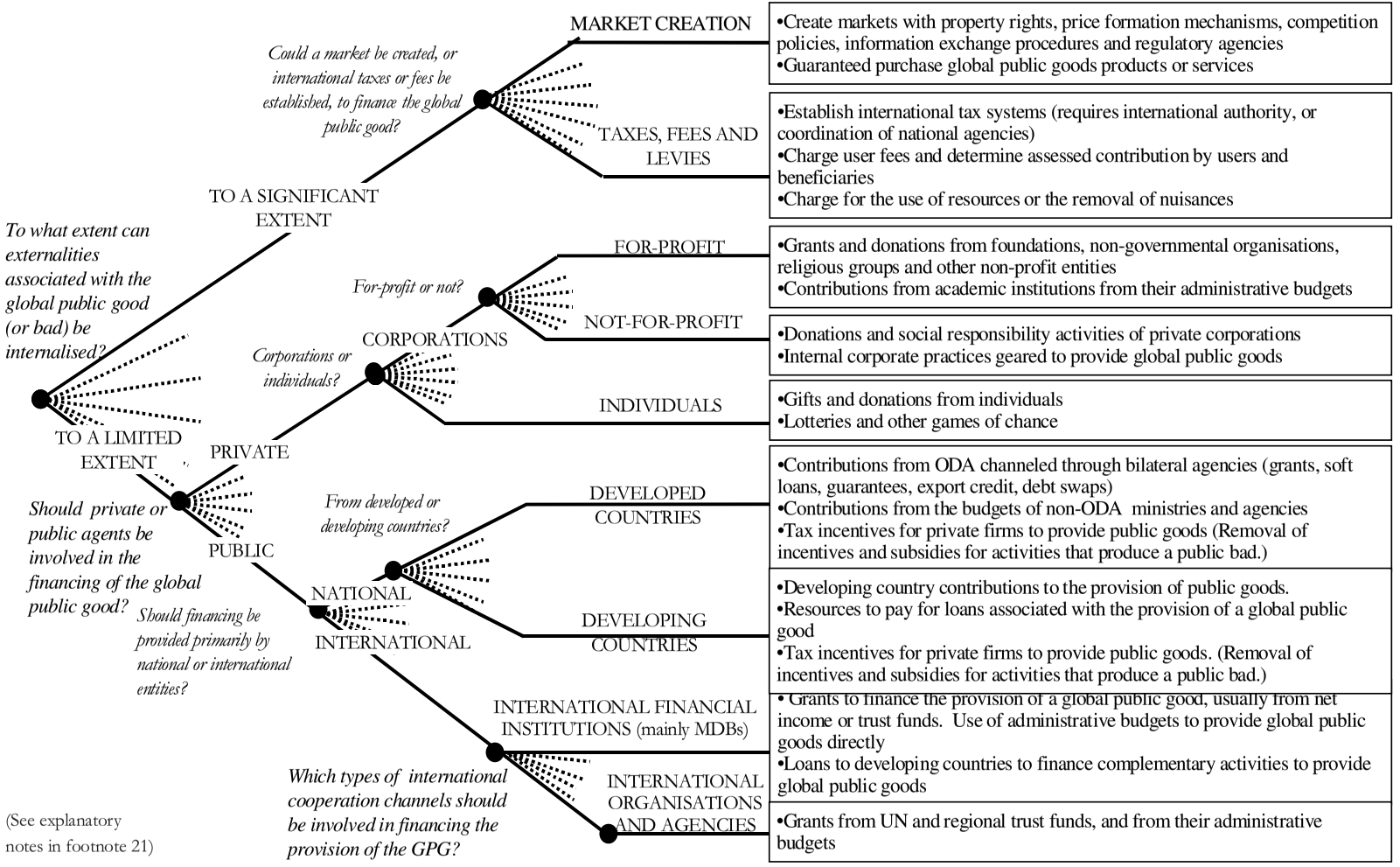
As indicated by the dotted lines at each node in Figure 3.3, choices at each node are not necessarily 'either' – 'or', and combinations of the two extreme branches in different degrees are possible, leading to a mixture of financing mechanisms. Partnerships between different types of institutions would usually lead to such combinations of financing mechanisms, for they involve intergovernmental agencies, private sector corporations, foundations, academic institutions, international non-governmental organisations, national government agencies and the like.

The exploratory framework starts with the question: to what extent can the externalities associated with the global public good be internalised? If those involved in the direct production or consumption of the public good can be made to pay for its provision or use to a significant extent, then it would be possible to establish a market, to make use of international taxes and fees, or to combine both. However, it is important to add that, even when externalities are internalised to a significant extent, there will always be a need for a public financing component (e.g. to regulate markets and promote competition or to create markets when there are no private consumers).

When externalities cannot be internalised, or only to very a limited extent, the question arises of whether private or public sources of finance should be primarily involved in the provision of the global public good (or which combination of both). If the answer is private sources, then it is pertinent to ask whether corporations – private entities that are legally incorporated – or individual persons should be involved in financing their provision. In the former case, a subsequent question would be whether the corporations are for profit or non-profit.

Following the diagram of Figure 3.3 along the branch that indicates that public entities *should* be involved in financing the global public good, the next question is whether national or international agencies should bear responsibility for providing the funds (or which combination of both). In the first case, there is the option of having developed or developing countries, and combinations of these, footing the bill for the provision of a global public good. If international institutions are to be involved, a subsequent choice

Figure 3.3 A framework for exploring financing options for the provision of global public goods



(See explanatory notes in footnote 21)

refers to whether international financial institutions (primarily the multilateral development banks) should assume this responsibility, or whether the burden should fall on the shoulders of other international organisations, such as the United Nations Secretariat, UN specialised agencies, and regional organisations.

It should be readily apparent that following the various branches, shown in Figure 3.3, in the case of a particular global public good, will lead to different combinations of mechanisms, and that these would be actually involved in financing the global public good to varying extents.[21] Particular combinations of financing mechanisms could be associated with a specific global public good at a given time. This would give rise to what may be called a global public good-specific 'financing fingerprint'. Moreover, the questions themselves would have to be adapted to fit the case of particular global public goods. For example, commons-related global public goods may involve very different options than policy outcome-related global public goods, and this in turn would require that different questions be asked to explore financing options.

3.4 A description of mechanisms to finance international and global public goods

This section provides a brief description of the mechanisms for financing international and global public goods identified in the exploratory framework of Figure 3.3, grouping them into four main categories (Table 3.3). The first is payments by users and beneficiaries, which are associated with *internalising the externalities* and take the form of market mechanisms and of international taxes and fees. The second refers to *private sources of finance*, which comprises funds provided by profit making firms, private independent foundations, corporate foundations, academic institutions, non-governmental organisations and individual persons. The third group includes all *public sources of funding*, which encompass funds provided by government agencies in developed and developing countries, tax incentives that imply governments foregoing revenues, and funds from international financial institutions and other international organisations. Finally, there are combinations of various sources of financing, which usually take the form of *partnerships* between government agencies, private firms, foundations, civil society organisations and international institutions.

3.4.1 Payments by users and beneficiaries associated with internalising externalities

Externalities are 'internalised' when the benefits or costs associated with an international public good are attributed or confined to the agents responsible for producing or consuming it. There are two ways in which producers and consumers of an international or global public good could be made to directly to finance its provision: by creating a market for it, and by levying taxes and fees.

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[21] *Explanatory Notes to Figure 3.3*: (a) Framework applies mainly to financing of the core component of an international public good (less so to complementary activities) and the questions should be adapted to each specific global good and distinct case. (b) Choices are not necessarily 'either-or'. Financing mechanisms could involve partnerships. Combinations of private and public financing may be required even in cases of market mechanisms, fees and taxes.

Table 3.3 Financing mechanisms for global public goods

Internalising externalities	Market creation or strengthening	
	Taxes, fees and levies	
Private sources	Corporations (for profit)	
	Corporations (not for profit)	
	Individuals	
Public sources	National	Developed country sources
		Developing country sources
	International	International financial institutions
		International organisations and agencies
Partnerships	Combination of various different sources	

Market creation and strengthening

A host of institutional arrangements are required to facilitate the creation or strengthening of markets for international and global public goods, including the assignment of property rights or the allocation of quotas, putting in place mechanisms for information exchange, procedures to set prices and the establishment of regulatory agencies. Property rights: comprise ownership rights, such as land titles and water rights; use rights: such as licenses, concessions, usufruct certificates, and access rights and development rights: such as the right to engage in bioprospecting and in natural resource exploration.

When markets are created, the resources to finance the provision of international public goods are provided by a multiplicity of agents (corporations, individuals, organisations) that pay a price for the benefits obtained or the harm caused. Market-based instruments provide incentives for private agents to engage in the production of international public goods, and also encourage efficiency and innovation. However, to operate properly, they demand transparency and effective regulatory frameworks, which in turn require public financing. This is a critical factor in considering financing options for global public goods. Essentially, it indicates that even where markets can provide or be created to provide global public goods, a certain amount of public financing is also required to ensure that private market mechanisms work well.

For example, the assignment of tradable pollution and emissions permits, which confer the 'right' to pollute or to discharge noxious gasses into the atmosphere, is necessary to create markets that would lead to a reduction of emissions, and consequently the provision of clean air and the mitigation of climate change. As it is possible to define targets for the total volume of emissions or discharges during a certain period, and then divide them into a number of discrete units that would be allocated to various economic agents in the form of tradable permits, it is possible to create markets for such permits. Should an agent exceed his allotted amount of emissions or discharges, it could purchase a tradable permit from another whose emissions are below the limit allowed. A price for the tradable permits would then be set in the transaction.

For this mechanism to be applied at the international level, a regime of tradable emissions would require the allocation of quotas to participating countries, whose

governments would then distribute tradable permits to firms and other economic agents. An international 'permits exchange' would bring together sellers and buyers, pretty much as stocks and futures exchanges work at present, and allow the transactions to proceed in an efficient manner. The way in which quotas are distributed to various countries could lead to a redistribution of international wealth, creating a potential source of revenue for developing countries and firms. An alternative scheme, which could also generate substantive revenues to finance emissions reduction programmes (or any other international public good), would involve auctioning the tradable emissions permits.

Designs for market mechanisms to internalise externalities have been put in practice to reduce emissions that cause acid rain at the regional level (the US has in place a trading regime between states for sulphur dioxide emissions permits). They have also been tested in the case of carbon sequestration and the emission of greenhouse gases at the global level (the World Bank has established the 'Prototype Carbon Fund' for this purpose).

Taxes, fees and levies

Taxes, fees and levies are another way in which externalities associated with international and global public goods could be internalised. A number of such mechanisms have been proposed to finance the provision of international and global public goods. They could be used to finance the provision of goods directly associated with the specific source of revenue (e.g. revenue from carbon taxes used to finance energy conservation and programmes to mitigate climate change). They could also be employed to finance the provision of international public goods in general.

For example, taxes and fees can be used to finance the provision of the public good of preserving and rationalising the use of international and global commons, or what are referred to as 'common pool resources' (Orstom *et al.* 1999). These are natural or man-made resources in which exclusion of beneficiaries through physical and institutional means is especially costly, and exploitation by one user reduces resource availability for others. These two characteristics create potential 'tragedy of the commons' dilemmas in which people following their own short-term interests produce outcomes that are not in anyone's long-term interest. This could happen at the international level with the utilisation of natural marine and terrestrial ecosystems, and with the use systems that are a product of human ingenuity, such as irrigation schemes, the World Wide Web, telecommunications networks and markets for international financial transactions. Taxes and user fees may be levied to provide incentives to avoid depletion, congestion, instability or other undesirable outcomes (public bads) associated with the unregulated use of common property resources, and at the same time would generate revenue to finance the provision of international and global public goods.

Taxes are an important potential source of finance for the provision of international and global public goods. Their application has been a subject of discussion during the preparations of the International Conference on Financing for Development, which will take place in Mexico in 2002 (Zedillo 2001). While debates have centred on the question of whether an 'international tax system' could be created, in practice there would be no need to create a supranational tax authority, for it would be enough to collect any such tax at the national level through existing revenue collection agencies – and, to coordinate

the way in which the revenues would be used at the national level and transferred to some international institution. Enthusiasm for the vast theoretical potential of this source for the financing of global public goods must, however, be viewed against the fact that some of the early proposals on this matter go back to the Brandt Report of 1980. Brandt specifically raised the possibility of revenues for development purposes from taxes on international trade, particularly the trade in arms, crude oil, durable luxury goods, the exploitation of mineral deposits, the use of the international commons, etc. The political feasibility of such arrangements may be no greater today than they were when Willy Brandt made his recommendations over 20 years ago (see Box 3.4).

Building on the experience of many cases at the national level, *user fees and levies* have also been proposed as means to generate resources to finance international and global public goods. Most of these proposals refer to very small fees charged for the use of the global commons, and would have a moderate to limited revenue generation potential in comparison with widespread international taxation (which could imply large collection and administration costs). These fees and levies include: a surcharge on airline tickets to reduce the use of congested flight lanes; charges for maritime transport to curb ocean pollution; user fees for activities in Antarctica to reduce their environmental impact; parking fees or auctions for satellites using the geostationary orbit to avoid congestion, and charges for the utilisation of the geomagnetic spectrum.

Once an agreement was reached to establish taxes or fees for financing international and global public goods, it would be possible for the entity in charge of collecting revenues to issue bonds or obtain loans, using future revenue streams as collateral. This would enable the start of operations before accumulating a significant amount of funds, and also could augment the financial resources at the disposal of such entity at a given time. Box 3.4 summarises the proposals that are under discussion, or have been mentioned in the preparations for the International Conference on Financing for Development and in other reports.[22]

3.4.2 Private resources for financing global public goods

Private resources for financing global public goods are derived from three broad sources: not-for-profit corporations, profit-making firms and individual persons. In relative terms, these are modest sources of financial support for international and global public goods, but could be a most important component of any scheme to finance their provision. In particular, private foundations are now playing a key role in exploring new arrangements and options to provide international public goods in the health and environment fields.

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[22] The Belgian government has introduced the subject of a tax on currency transactions, also known as the 'Tobin tax', in the agenda of the European Union during the second half of 2001, when it holds the Presidency. Although there has been much controversy on this subject in France and Germany, the French and German governments set up in September 2001 a high-level task force on means to control financial markets, including a possible Tobin tax, and agreed to examine and discuss this issue at future EU summits. European NGOs, and particularly the French group ATTAC, are pressing for a Tobin tax in the Euro currency zone, although James Tobin himself has distanced himself form these proposals. The United States and the United Kingdom remain opposed to any international tax scheme. The Zedillo panel report (see Box 3.4) has also examined this issue, but expressed a preference for a 'carbon tax'.

Box 3.4 Examples of international taxes, fees and levies

Currency transactions tax (Tobin tax)

The perceived advantages of deterring short-term speculation in the foreign exchange markets and of generating large sums of revenue has made a currency transactions tax (Tobin tax), even at a 'small' rate, attractive to many proponents. It would consist in an *ad-valorem* tax on foreign exchange transactions, possibly confined to the wholesale foreign-exchange market and collected at the point of payment or settlement in banking systems. Total annual global currency transactions were of the order of US$ 264 trillion in 2000. If a tax were fixed at 0.1% and it had no effect on the tax base, it would raise revenue of the order of US$ 264 billion; fixing a rate of 0.02% would generate around of US$53 billion. Confining the tax to wholesale transactions and collecting it at the point of bank settlement (with the cooperation of a handful of vehicle-currency countries), enforcement and administration would be rather simple and inexpensive.

International air transport tax

Emissions and noise from air transport of passengers and cargo is a key source of environmental disruption. Proponents of an international air transport tax argue it embodies the 'polluter-pays' principle of internalising environmental externalities. Such a tax is also progressive in ability-to-pay terms, both across income-class world-wide and across countries, since the tax burden would fall mostly on those individuals and businesses that most benefit from, and contribute to, the 'globalisation process' through international air transport. A 1% tax on the price of all international passenger tickets and freight transport is estimated to generate US$2.2 billion a year, and on passenger tickets alone about US$0.8 billion.

Carbon tax

A carbon tax would be a levy on all commercial forms of hydrocarbon fuels. If the tax were to be universal, it would require the cooperation of all governments. But the absence of universal agreement would not make the operation impossible or necessarily unacceptable for those otherwise willing to take part. Governments would be free to collect the tax in several different ways; but most probably in the form of an excise-type tax per unit quantity of hydrocarbon fuel sold, with the rate varying according to the carbon-content coefficient from one fuel to another. A uniform carbon tax on motor gasoline of US$2.00 per US barrel, would represent US$17 per tonne of motor gasoline and US$21 per tonne of carbon. Applied universally, this would raise about US$125 billion per year. Specific excises on sales of commodities of this sort are inexpensive to administer, compared with other kinds of taxes, the administrative machinery would not have to be created anew and administrative and compliance costs would be quite small.

Other proposals

- *Taxation of the global commons*, such as mining of the seabed and possibly Antarctica. There is no seabed mining at present and provisions exist for taxing it under the Law of the Sea Convention. Taxing of ocean fishing would be possible, but difficult to administer and unlikely to generate significant revenue. Mining in Antarctica is prohibited at present.

- *Taxes on arms exports*. This would largely involve governments in 'taxing themselves'. A tax on arms might well fall on importers rather than exporters and would thus disproportionately affect developing countries that are mostly net buyers. The tax would probably not contribute very much to limit illegal transfer of arms, and is fraught with political and administrative difficulties.
- *A 'bit tax'.* This would be a small tax on the volume of data transmitted through the Internet, for example, at 1 US cent on every 1,000-kilobyte of data. At that rate, Internet data traffic in 1996 would have generated US$70 billion. Although such a tax could have the potential to mobilise increasing amount of revenues, the rapid expansion of the Internet would make it difficult to impose a tax on such an important and cross-cutting emerging technology, at least in the immediate future.
- *Charges on the use of ocean maritime transport would reflect the need for ocean pollution control and for keeping sea-lanes* open to all legitimate users. Special fees or auctions of licenses for maritime dumping of waste, where the level of toxicity does not require outright prohibition, could also be put in place.
- *Fees for auction revenues for geostationary satellites*. The geostationary orbit is a band of outer space encircling the equator at an altitude of approximately 22,300 miles, and a satellite moving in this orbit from east to west at a speed of 6,800 miles per hour is 'parked' at a fixed position in relation to the surface of the earth. Various governments and private firms have placed satellites in orbit at no cost for the space they use and with substantial profits accrued. Fees for the use of this global common could be levied by the UN or another international body.

Sources: United Nations (2001b); Cooper (2001); Panayotou (1997); Mendez (1994).

Not-for-profit corporations

Not-for-profit corporations include independent foundations, non-governmental or civil society organisations, and academic institutions. *Private independent foundations* generally have endowments that generate income from investment, which is used to award grants (grant-making foundations) or to run programmes (operating foundations). They work at arms length from their original benefactors, whether they be wealthy individuals or corporations, and focus their activities on the provision of public goods at various levels, from the local to the global. Grant-making foundations finance non-governmental organisations, academic institutions, community associations and individuals to carry out specific activities linked to the provision of public goods. Operating foundations engage directly in the production of such goods.

Private independent foundations are often considered as 'social venture capitalists' willing to support risky endeavours and initiatives that would be difficult for public or other private entities. As they often finance exploratory ventures which, if successful, are subsequently supported by governments and international organisations, their impact can be significantly leveraged and magnified. For example, the early development of 'green revolution' technologies was pioneered by the Rockefeller and the Ford Foundations and later supported by international financial institutions, governments in developed and developing countries, and by private firms and farmers. In recent years, foundations have been playing catalytic roles in a number of areas, such as the development of vaccines

against infectious diseases, the conservation of biodiversity and the prevention of violent conflicts. The Rockefeller Foundation launched, in 1996, the 'International AIDS Vaccine Initiative' to speed the development and distribution of AIDS vaccines, and the MacArthur Foundation provided upwards of US$50 million during the 1980s and 1990s to support pioneering biodiversity conservation efforts in developing countries. In both of these cases, a significant amount of complementary resources was provided by government counterparts and by other institutions. The Carnegie Corporation of New York launched an international Commission on Preventing Deadly Conflict, which operated during the 1990s and led to a number of studies, meetings and policy initiatives to clearly define and promote what was identified as 'operational conflict prevention'.

Unconstrained by national boundaries, usually free of political interference and capable of operating at the international and global levels, private foundations have become catalysts for change and have helped to initiate risky projects with large potential payoffs. Like business investors, venture philanthropies seek maximum returns, but they measure those returns in social impact terms rather than profits. Their advantage arises from their mandate and demonstrated willingness to invest early in the innovative initiatives that can generate widespread benefits.

International giving by all foundations – which includes grants to overseas organisations and to US-based recipients for international purposes – reached an estimated US$1.6 billion in 1998, up from approximately US$400 million in 1990 (Foundation Center 1997). This is, nonetheless, a small fraction of total US foundation grant-making, which exceeded US$22 billion by the end of the 1990s (Foundation Center 2001). In the early 1990s, international grants by private foundations amounted to less than one per cent of total Official Development Assistance. By the end of that decade this percentage had doubled and such grants represented about 20 per cent of international resource transfers for financing international public goods (World Bank 2001a). However, private foundations are largely a US phenomenon, primarily because tax and inheritance laws contain incentives for wealthy individuals to establish them.

Non-government organisations, such as Oxfam, CARE, Nature Conservancy, Greenpeace and Amnesty International, among thousands of others, also contribute to the financing and provision of international public goods. Known variously as 'private voluntary organisations', 'civil society organisations', 'citizen associations' and generically labelled 'non-governmental organisations' (NGOs), they have limited formal powers but are capable of mobilising international public opinion, which often allows them to have a significant influence in matters related to international and global public goods. For example, they have promoted environmental agreements, strengthened women's rights, championed the rights of poor children, and spearheaded arms control and disarmament measures, such as the banning of anti-personnel mines.

Large international *Non Governmental Organisations* (NGOs) may have operational budgets that run into tens of millions of dollars, although most NGO budgets are considerably smaller. They obtain funds from a variety of sources. These include membership dues, which have been one of the mainstays of their funding strategies, and also grants or contracts from governments and international institutions, fees for services, profits from sales of goods, grants from private foundations, and direct donations from corporations and wealthy individuals. A few well-established NGOs involved in humanitarian relief and the provision of social services in developing countries, such as

CARE and Oxfam, are increasingly receiving large contracts and grants from donor countries and development assistance agencies. During the 1990s, some international institutions, for example the UN High Commission for Refugees, expressed their concerns that donor governments were increasingly channelling funds for humanitarian assistance through NGOs (some of them from their own countries), rather than through multilateral agencies. As a large number of NGOs appeared on the scene of humanitarian emergencies, it became even more difficult for international institutions to coordinate large-scale relief efforts.

Academic institutions, including research centres, policy-oriented think tanks and the statistics departments of various international and national institutions, also contribute to the provision of international public goods. These take the form of research on international issues, the compilation and processing of information and statistical data, the dissemination of knowledge and the spread of best practices, and the creation and consolidation of epistemic communities. Academic institutions obtain financing from: the budgets of private and public universities; research contracts; the regular budgets of bilateral and multilateral agencies; private donations, and from government grants.

For-profit corporations

This source of financing, which could eventually contribute to the provision of international and global public goods through corporate philanthropy and social responsibility programmes, comprises funds obtained from *corporate foundations*, *corporate giving programmes* and *internal practices* associated with profit-making firms. A corporate foundation maintains close ties with the donor firm, but may be incorporated as a separate legal entity, sometimes with an endowment of its own (which would subject it to the same rules and regulations as other private foundations). At the end of the 1990s, in the USA, there were more than 2,000 corporate foundations holding about US$13 billion in assets (Foundation Center 2001).

Corporate giving programmes are established and administered directly by profit-making firms and do not require establishing a separate endowment. The cost of running these programmes is considered part of the operating expenses of the company and usually funded from pre-tax income. These programmes may provide gifts, award prizes, contribute through price discounts and give paid leave for employees to engage in *pro-bono* activities. However, these are not usually directed to the provision of international and global public goods and are quite small. Some examples would be the discount of medicines to fight against communicable diseases and the provision of legal advice on a *pro-bono* basis for the establishment of trust funds in developing countries.

Some large corporations are modifying their internal practices and the way they operate to contribute to the provision of international and global public goods. For example, firms such as Shell and British Petroleum are in the process of establishing limits for their own total greenhouse gases discharges and internal emissions trading markets to ensure their subsidiaries all over the world comply with them.

Individual persons

This source of financing refers to the contributions made by individual persons to the provision of international and global public goods, which take the form of direct donations,

large gifts by wealthy individuals, earmarking a portion of payments for services and purchasing lottery tickets.

Small donations to non-governmental organisations and civil society associations, either of permanent character (Red Cross, Greenpeace, Amnesty International), or of temporary nature (fund raising campaigns, pledges from viewers and listeners of TV and radio concerts), constitute a financing mechanism that may, in exceptional cases, add up to significant amounts. For example, the 'Live Aid' series of rock concerts organised in the early 1990s raised more funds to combat AIDS in Africa (through phone-in pledges charged to credit cards) than a formal donor governments conference organised under United Nations auspices at that time. A second mechanism comprises large gifts made directly to organisations and programmes engaged in the provision of a public good. For example, the rock singer and composer Elton John donated about US$80 million, obtained from the royalties of a compact disc issued in memory of Princess Diana, for the removal of anti-personnel mines in war-torn countries. A third way in which individuals may contribute resources to finance the provision of an international or global public good, is through earmarking a portion of the payment for certain services. For example, there are private financial institutions that issue 'green' credit cards, through which the cardholder can earmark a small percentage of the monthly charges for donation to environmental causes.

While the resources obtained from individual donors through these three mechanisms may be significant in relation to the cost of providing some particular public good (e.g. landmine removal in a certain geographical area), administrative costs tend to be high (especially in the case of small donations), and resource flows not stable or predictable. Moreover, the total amount raised through these mechanisms is quite small in comparison with the amounts required for the provision of most international and global public goods.

A fourth mechanism for raising funds for international and global public goods from individual persons is associated with lotteries and other games of chance. In contrast to the preceding three, this one offers a large revenue generating potential, but this has so far not been put into practice. A world-wide 'United Nations Lottery', was once proposed by a developing country delegation to the Administrative and Budgetary Committee of the UN General Assembly during the early 1970s, but apparently was not taken seriously by other delegations. In recent years there has been renewed interest in the use of lotteries to raise funds for international causes, most notably for environmental conservation. For example, during the 1990s several NGOs proposed the creation of a 'People's Earth Fund' associated to a lottery scheme to raise funds. A pre-feasibility study prepared in the mid-1990s for a 'Blue Planet Global Lottery of the Skies', which would be linked to the purchase of international airline tickets indicated that it could generate substantive funds. With lottery ticket prices in the US$1–5 range and conservative assumptions regarding market penetration, it was estimated that between US$500 and 700 million could be generated annually, to finance global environmental initiatives.

3.4.3 Public resources for financing international and global public goods

Public resources for financing international and global public goods are obtained from government revenues. They are channelled through *national* mechanisms, which include

donor country contributions (from ODA and non-ODA ministries), budget allocations by developing country governments, tax incentives (foregone public revenue), and from the removal of incentives and subsidies for activities that produce public bads. Public resources are also channelled through *international* institutions and organisations, such as the international financial institutions (IFIs), which include the IMF and the multilateral development banks and a variety of international funds, and also through international and regional organisations and agencies.

Developed country resources

Developed countries finance the provision of international and global public goods using four different mechanisms: (1) contributions from Official Development Assistance (ODA) through bilateral agencies, (2) debt swaps and debt reduction operations, (3) contributions from the budgets of non-ODA ministries and agencies, and (4) tax incentives for private firms to encourage the provision of a public good (including the removal of subsidies for activities that produce global public bads).

Bilateral agencies contribute to the financing of international and global public goods through the budgets for Official Development Assistance, whose resources are obtained from general tax revenues at the national level, from contributions by state or provincial taxes, and occasionally from other complementary sources.[23] Government flexibility in the allocation of resources varies from one donor country to another, and some parliaments give precise indications regarding the geographical and functional distribution of ODA from year to year, thus restricting the freedom of action of bilateral agencies. In some countries, there is a ministry in charge of channelling most, if not all, official development assistance, but in other donor countries, several ministries may be involved, such as the Ministry for Foreign Affairs, the Ministry of Finance and other sector ministries. Of particular interest is the case of the new donor countries, such as the Republic of Korea, Poland and the Czech Republic, which have established their development assistance programmes during the 1990s and could evolve in directions that are different from those of the established donors.

Bilateral agencies use a variety of instruments to finance the provision of international and global public goods. They provide grants and direct donations of money and technical cooperation, as well as loans, guarantees and export credits for the purchase of equipment, machinery and consulting services. The combination of grants and technical cooperation, which includes the service of experts, technology transfer and training programmes, is usually the main vehicle through which bilateral agencies support the provision of international and global public goods. These resources can be given directly to agencies and organisations in developing countries, or channelled through funding programmes and trust funds, set up by regional and international institutions.

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[23] For example, Canadian provinces contribute approximately 1 per cent of total ODA, primarily for humanitarian and development assistance; the autonomous regions and municipalities account for about 10 per cent of total Spanish ODA; and since the 1980s Belgium has raised complementary resources for development assistance through a national lottery.

A second bilateral financing mechanism is *debt swaps*, which are legal and financial instruments that transform developing country debt with official or commercial creditors into direct budget allocations for the provision of international and global public goods. When these operations discount the original face value of the debt, they combine debt relief with the redirecting of public expenditures towards national and local activities associated with the provision of an international or global public good. Debt swaps take a variety of forms, such as debt for nature (environmental protection), debt for social programmes (education, health, nutrition), and debt for development (to support national or local programmes in general).

Debt swaps usually involve government-to-government transactions, although there are also debt swaps between holders of private debt and developing country agencies. In the late 1980s and early 1990s, when commercial banks held significant amounts of developing country debt, there were several 'debt for education' and 'debt for environment' swaps of commercial bank debt, which involved some discounts and usually required the participation of non-governmental organisations as intermediaries. Bilateral creditors operate within the Paris Club to establish common rules for the treatment of developing country debt, and have recently allowed the use of up to 20 per cent of the debt stock of middle and low income countries for swaps associated with environmental and social programmes.[24]

A third mechanism used by donor countries to finance the provision of international and global public goods is through *budget allocations by non-ODA ministries and agencies* (Kaul 2001; Kaul *et al.* 2001). Compiling these allocations on a country by country and regular basis, would help to settle the question of whether the financing of global public goods is additional to Official Development Assistance, but donor countries have not established as yet, the reporting procedures to allow this. Should agreement be reached to finance global public goods through contributions from non-ODA ministries and agencies, it would be possible, at least in principle, to expand the envelope of resources to address both development and global concerns, and thus face the vexing question of 'additionality' in the funding of international and global public goods (see section 2.3).

For example, the US National Institute of Health (NIH) has a budget of US$6 billion to finance scientific research, part of which is used for the development of vaccines for malaria, tuberculosis and HIV/AIDS, the spread of each being a global public bad that affects primarily poor countries. However, it is difficult to determine how much precisely the NIH allocates for such global purposes. The French government has decided to channel additional resources to finance the provision of environmental global public goods through its 'Fonds Francais pour l'Environment Mondial', and the government of Denmark has allocated an additional amount of 0.5 per cent of its GNP for global environment purposes. Other European countries are considering allocating resources specifically for the provision of international and global public goods, and in some cases it is possible that these would be additional to their conventional development assistance budgets.

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[24] Debt reduction operations and debt swaps between multilateral creditors and developing countries are rare, although the recent Heavily Indebted Poor Countries (HIPC) initiative has involved multilateral development banks in a major way for the first time.

A fourth mechanism through which developed countries can contribute to the financing of international and global public goods is *tax incentives for private firms*, which imply foregoing tax revenues. For example, under the Millennium Vaccine Initiative, President Clinton announced in January 2000 that up to US$1 billion would be given in tax credits to corporations to promote the delivery of existing vaccines to developing countries and to accelerate the development of new vaccines. This initiative called for a major boost in vaccine research efforts and for drug companies to invest in vaccine development. As a result, the pharmaceutical company Merck, Sharp & Dome pledged to donate the equivalent of US$1 million in doses of hepatitis B vaccine over 5 years, and has made a commitment to increase its efforts to develop vaccines against HIV/AIDS and other diseases. Similarly, American Home Products will give UNICEF 10 million doses of Haemophilus influenza B vaccine to prevent pneumonia and meningitis, and Aventis Pasteur will donate 50 million polio vaccine doses to African countries and will intensify its work on an HIV/AIDS vaccine (US White House 2000).

It is conceivable that similar initiatives involving tax incentives for private firms in developed countries could be put in place to promote, among other things, greater energy efficiency to reduce carbon emissions and prevent climate change. At the same time, removing incentives for activities that produce global public bads, for example using fossil fuels instead of renewable sources of energy and giving tax breaks to cattle ranchers and loggers to clear tropical forests, could also be considered as ways of financing the provision of global public goods.

Developing country resources

Developing countries contribute to the financing of international and global public goods through their *national budgets* and in some cases through the budgets of state and local governments. These resources cover primarily the cost of complementary national and local activities required for the provision of international and global public good, but also involve the direct financing of cooperative programmes with other, mostly developing countries. These contributions should be acknowledged as part of the total amount of resources devoted to the provision of international and global public goods, even though it may be quite difficult to separate precisely those resources that fund such goods from other national and local expenditures.

Covering the cost of the domestic components (complementary activities) required for the delivery of international and global public goods is one of the main ways in which developing countries contribute to their provision. For example, resources allocated to national parks as part of environmental programmes contribute to the global public good of biodiversity conservation; resources for vaccination campaigns and for treatment of contagious illnesses contribute to the public good of preventing the international spread of diseases, and funds for alternative energy programmes at the national level help in reducing carbon emissions and mitigating global climate change. Similarly, the incremental costs of complying with international financial regulations and regimes, such as the Basle accord on capital adequacy rules for banks, could also be considered as a financial contribution to the provision of the global public good of financial stability. Finally, budget allocations to repay international loans associated with domestic activities

linked to international and global public goods are another way of contributing to their provision.

Moreover, there are resources specifically allocated by developing countries to develop and distribute products and to take actions that contribute directly to the provision of an international or global public good. For example, with government support an Indian biotechnology firm has developed a vaccine for Hepatitis B, which is available at US$2 per dose, compared with current international prices that exceed US$50 per dose. Between 1992 and 1997, Vietnam reduced the death toll related to malaria by 97 per cent, by developing and using locally produced, high-quality drugs. Similarly, the government of Vietnam developed the only vaccine against meningitis B, by sponsoring biotechnology research and by carrying out a national immunisation programme in the late 1980s. China, Brazil and India currently lead developing country efforts to provide inexpensive treatment for HIV/AIDS (Rath 2001).

Many developing countries engage in technical cooperation and knowledge transfer programmes with other developing countries facing similar problems. These programmes involve scientific information exchanges, sharing of technical know-how and training activities, and increasingly involve the relatively more advanced emerging countries such as Brazil, India, China and Mexico, and also smaller middle-income countries such as Costa Rica. Such programmes could contribute to the provision of international public goods, particularly through joint programmes in health, biodiversity conservation, environmental protection and cooperation to prevent conflicts.

International Financial Institutions

International Financial Institutions (IFIs), which include the multilateral development banks (MDBs), the IMF and some special funds such as the International Fund for Agricultural Development (IFAD), finance the provision of international and global public goods from their net income, member contributions, their administrative budgets and by managing trust funds that receive funds from a variety of sources. During the last 50 years, these institutions have played a major role in development financing, and have become very active in financing international and global public goods.

The MDB model has proven to be a most useful institutional innovation to assist developing countries through a combination of financial resource mobilisation, capacity building, institutional development and knowledge brokering, and to help provide international and global public goods. Multilateral development banks are international financial intermediaries, whose shareholders include both developed countries and borrowing developing countries. They mobilise resources from private capital markets and from official sources to make loans to developing countries on better than market terms; they provide technical assistance and advice for economic and social development, and they also provide a range of complementary services to developing countries and to the international development community. About 25 institutions corresponding to this definition were identified in a recent study (Bezanson *et al.* 2000).

MDBs make *loans* and give *grants* to developing countries to finance the domestic complementary activities required for the provision of international and global public goods, and also provide some of these goods directly (development research, statistical information). They have several product lines, which include long-term loans at below

or near market rates of interest; concessional loans at very low rates of interest and with long repayment periods; guarantees to enhance private investment, and relatively small amounts of grant financing, mostly for technical assistance, training and capacity building in borrowing countries. Regular lending operations are refunded from borrowings in international capital markets, while concessional loans are funded through periodic contributions by donors (replenishments) and from the MDBs net income. Loans to developing countries can finance a host of complementary domestic activities related to the provision of international and global public goods, although, as indicated previously, it is difficult to separate them from other publicly funded activities.

Grants by MDBs, which are funded from net income and special donations, are a particularly important source of financing for the provision of international and global public goods, mainly because regular and concessional loans focus on domestic development priorities. The total estimated amount of grant resources allocated to global public goods by MDBs amounts to about US$2 billion in 2000, of which the World Bank share is approximately US$1.3 billion. Contributions to trust funds administered by the World Bank in that year include those to the Global Environmental Facility (US$247 million), the Montreal Protocol and Ozone Trust Fund (US$80 million), and the Consultative Group on International Agricultural Research (US$38 million). The rest of the US$1.3 billion is allocated to smaller trust funds for global and regional programmes (Infodev, Prototype Carbon Fund, Persistent Organic Pollutants, among others), and to country specific trust funds administrated by the World Bank (World Bank 2001a). However, not all of the latter can be seen as contributing to the provision of international and global public goods.

The Global Environmental Facility (GEF) is perhaps one of the most visible grant-making institutional innovations associated with international institutions. It works in four critical fields: biodiversity loss, climate change, degradation of international waters, and ozone depletion. GEF serves as the financial mechanism for the UN Convention on Biological Diversity and the UN Framework Convention on Climate Change, and is accountable to the Parties to the Conventions. UNDP, UNEP and the World Bank are the three implementing agencies involved with GEF since its inception. In 1994, 34 nations pledged US$2 billion in support of GEF activities, and in 1998, 36 nations pledged US$2.75 billion for the period 1998–2002 (see Global Environment Facility website).

There have been great pressures on the uses and allocation of MDB net income, primarily because of competing priorities. Some MDB shareholders prefer that net income be used to strengthen the financial position of the institution, others prefer it be used to reduce loan charges and interest rates, and still others would like to increase the amount allocated to grants for a variety of purposes, including the provision of international and global public goods. It is not clear or readily apparent that the best use of net income is to increase the number and size of grants for public goods purposes. It may be better to provide such grants through trust funds, receiving contributions from donor countries, developing countries, private foundations and other entities. These considerations, added to developing country concerns about adequate representation in the Board, have led to questions on the appropriate role for the World Bank, and for other MDBs, in the provision of international and global public goods, and to a reappraisal of the implicit division of labour that has emerged between international institutions in such provision.

The International Monetary Fund (IMF) defines itself as 'a cooperative institution that 182 countries have voluntarily joined, because they see the advantage of consulting with one another in this forum to maintain a stable system of buying and selling their currencies, so that payments in foreign money can take place between countries smoothly and without delay' (International Monetary Fund website).

The IMF plays a rather limited role in the provision of international and global public goods, with the exception of the global public good of 'financial stability' in which it has a central role. The IMF raises its funds primarily from quota subscriptions, or membership fees. The IMF lends money only to member countries with payment problems that do not have at their disposal enough foreign currency to pay for their international obligations. A member country with a payment problem can immediately withdraw from the IMF 25 per cent of its quota that it paid in gold or a convertible currency, and can also borrow up to three times what it paid in as its quota subscription. This limit, however, does not apply to loans under the IMF's special facilities, including the Supplemental Reserve Facility, created in December 1997 to provide short-term financing to members faced with a sudden and disruptive loss of market confidence.

Between 1995 and 2000, the amount of financial rescue packages, which are usually led by the IMF but involve resources from various bilateral, multilateral and private sources, reached US$284 billion, of which IMF contributed US$106 billion. Although these are seen by some analysts as documenting 'a strong commitment to provide global public goods' (Raffer 1999), the actual provision of rescue packages is highly excludable and rather difficult to justify as a global public good. However, the availability of such rescue funds, the agreements to establish them and the regulations covering their application, together with IMF initiatives to provide financial standards, codes and information, do provide comfort to all member countries and would constitute a global public good in the more restricted sense proposed in section 2.3 of this report.

One potential source of financing for international and global public goods associated with the IMF is the creation of 'Special Drawing Rights' (SDRs), the original intention of which was to allow international reserves to be increased in line with needs, without imposing costs on member countries. However, this mechanism has not been activated since 1981 and could be used to build up developing country reserves, to finance development programmes and even to finance the provision of international and global public goods. There have also been proposals to use proceeds from the sale of gold reserves held by the IMF for the same purposes on a one-off basis.

Building on the fact that an emission of special drawing rights was authorised in 1997 and ratified by 71 per cent of the IMF members, George Soros has suggested that special drawing rights could be used to finance the provision of global public goods and also to bolster development assistance programmes. Soros (2001) has proposed that an international panel of eminent persons be appointed to approve, monitor and evaluate the programmes that would be eligible for funding with SDRs. This council would operate under the IMF, but independently from it, and would channel resources through three windows: one to finance global public goods, another to finance government programmes in developing countries, and a third to fund non-governmental organisations. If the scheme was successful, the initial emission of Special Drawing Rights could be repeated periodically. Soros visualises his proposal as generating competition between international institutions, developing country government agencies, and non-

governmental organisations to present better and more effective programme proposals and to obtain financing.

International organisations and agencies

The United Nations and most regional organisations were designed half a century ago as intergovernmental fora for diplomatic debate and coordination of international policies aimed at maintaining international peace, promoting development and, in general, providing what are now called international and global public goods. At present, the UN system is composed of more than 190 sovereign states and there are dozens of regional organisations (such as the European Union, the Organisation of African Unity, and the Organisation of American States). All of these comprise a rich web of international institutional arrangements that can and is often mobilised for the provision of international and global public goods.

The UN is financed through assessed budget contributions from member states, voluntary contributions to various funds, and *ad hoc* funding arrangements, such as cost-sharing and special pledging sessions, which usually cover emergencies (for example, relief for natural disasters) and shortfalls in assessed and voluntary contributions. In a few cases, such as that of the World Intellectual Property Organisation, resources are raised through payments for services. A recent study on mobilising support and resources for UN funds and programmes (Mistry and Olsen 2000) recommends that their core-funding base be bolstered, regularised and made more predictable. One way of doing this is to move from voluntary contributions to legally binding replenishments, although the COWI studies (Mistry and Olsen 2000) express some scepticism that this could radically improve the financial situation of United Nations funds and programmes.

The United Nations has six main organs: the General Assembly, the Security Council, the Economic and Social Council, the Trusteeship Council, the Secretariat and the International Court of Justice. These main bodies and the five economic and social regional commissions and secretariats are financed from the UN regular budget, which is covered by member states, through assessed contributions defined according to a complex formula that takes into account their relative wealth and level of development. A variety of funds, programmes and other units are attached to this first group of main bodies; commissions and secretariats are fully or in large part financed by voluntary contributions or 'extra-budgetary resources'.[25] Most of these funds are provided by governments, although occasionally private sources may be involved, as is the case with the United Nations Foundation that was established with a US$1 billion gift by television magnate Ted Turner. A second group of UN bodies comprises the specialised agencies,[26] whose

[25] These include the United Nations Children's Fund (UNICEF), the Development Program (UNDP), the Environment Program (UNEP), the joint UN/FAO World Food Program (WFP), and the High Commissioner for Refugees (UNHCR), among others.

[26] These include, for example, the International Labour Organisation (ILO), the Food and Agriculture Organisation (FAO), the Educational Scientific and Cultural Organisation (UNESCO), the World Health Organisation (WHO), the World Intellectual Property Organisation (WIPO), and the World Trade Organisation (WTO), among others.

Box 3.5 Main functional roles of the United Nation system

- Maintain *peace and security* through both permanent mechanisms, such as the Security Council, as well as special exigent programmes (e.g. those in Bosnia, Kosovo, and East Timor).
- Facilitate *global commercial interaction* by setting up UN-anchored, treaty-based legal/operational governing frameworks for dealing with cross-border issues and interests, in particular (fragmented) areas of frequent/intensive commercial cross-border activity, e.g. aviation, telecommunications, meteorology, postal services, maritime shipping, etc.
- Provide *emergency, disaster and humanitarian relief/support* in the aftermath of man-made or natural disasters through agencies, such as UNHCR and other similar institutions.
- Protect *human rights* often in the face of their violation by national governments in the event of sub-national ethnic conflicts.
- Establish global norms to guide the behaviour and policies of countries in a number of areas such as the environment, gender, children, poverty, development assistance targets and practices etc. (this is often referred as the UN's normative role).
- Facilitate *global development* in three ways: i.e. (1) *universally* (via UNDP); (2) *sector-specific* (through specialised agencies, e.g. FAO, WHO, UNIDO, UNESCO, UNEP, as well as DFPs, such as UNICEF, UNDCP, UNFPA, UNIFEM, etc.); and (3) *region-specific* (i.e. through UN Regional Economic Commissions with those for Africa, LAC, Asia and Eastern Europe, playing a pro-active advocacy and issue-based role).

Source: Mistry and Olsen (2000)

costs are also covered by assessed and voluntary contributions from member countries and by payments for services or direct donations from private sources. They have separate financing schemes than from the UN main bodies. Box 3.5 summarises the mandates of the United Nations secretariats, agencies, bodies and programmes, grouping them into six main functional roles.

The multiplicity of United Nations bodies which perform these functions, most of which are related to the provision of international and global public goods, operate through grants, technical assistance and the direct provision of services. In principle, the UN system should have at its disposal the necessary resources to fulfil its broad mandates. In practice, it has been the scene of protracted and acrimonious budget battles that have severely limited its ability to function effectively. These battles reflect, in large measure, the dilemma of how to achieve a broad representation and inclusion of a great variety of national interests, while at the same time, reflect the different levels of financial contributions to the UN budget in its decision-making processes. For example, the countries that contribute more than 95 per cent of the budget of the main UN organs have a combined total of less than 20 per cent of the votes.

The principle of 'one country one vote' has conferred legitimacy to most UN bodies, which are seen as being more democratic than, for example, the multilateral development banks, where voting power reflects the relative contributions to the capital of these institutions. However, rich donor countries have reservations and are less willing to provide

taxpayer's money to the UN and regional bodies, over which they have little influence or control on spending decisions. These considerations lead to a series of tensions between representation, participation, voice and inclusiveness on one side, and resource availability, effectiveness in decision-making and administrative efficiency on the other. A result has been the steady migration of donors away from UN and regional bodies that have a one country one vote decision making structure, to funds, programmes and institutions in which they can exert the power of the purse. This has important implications for the provision of international and global public goods, which require the broadest possible participation of stakeholders and, at the same time, substantive and stable financial resources.

3.4.4 Partnerships for financing international and global public goods

Partnerships, which have become more common, usually combine several sources of financing for specific purposes and often take the form of temporary programmes (section 3.2). They involve coalitions of government agencies, private firms, foundations, civil society organisations and international institutions to different degrees and have evolved a diversity of *ad hoc* financing, decision-making and administrative procedures. Several of these partnerships have focused on the provision of international and global public goods and their presence has stimulated action beyond what governments alone can do, but they can also strain administrative capacity in developing countries and are fraught with governance problems.

For example, there have been alliances between some parts of the international financial community, large private corporations and environmental movements seeking to advance action on climate change. These underscore the point that many of the key changes necessary to promote and fund activities that deter climate change will come not only from more intergovernmental cooperation alone, and that changes in industry and pressures from civil society stakeholders are also necessary. Sustaining and building on such coalitions is not an easy task, but it is possible to design institutional and incentive frameworks that take advantage of the strengths of each partner. There is already evidence of successful partnerships between businesses and NGOs in the field of climate change, which require little intervention from governments and international organisations. These practices may be gradually extending to other concerns such as the sustainable use of forests and fisheries (Bendell 2000).

Partnerships have also emerged in the fields of biodiversity conservation and the launching of immunisation programmes. As indicated above, the Global Environment Facility, which involves three implementing international institutions (World Bank, UNDP, UNEP), is also involved with bilateral agencies from donor countries, private foundations, international NGOs, and a variety of government, private sector and civil society organisations in developing countries in the financing of specific programmes. While this may help to increase the amount of resources for the conservation of biodiversity, it may also lead to considerable administrative complexity and even confusion. National and local organisations in developing countries may not have the capacity to deal with demands from multiple donors involved in the partnership, which often have conflicting interests and priorities.

Another example of partnerships to provide and finance an international public good

is the Global Alliance for Vaccines and Immunisation (GAVI), formed in 1999, with the objective of ensuring that every child in the world is protected against vaccine-preventable diseases. The GAVI partners have come together to coordinate and revitalise immunisation programmes at the international, regional and national levels and include the Bill and Melinda Gates Foundation, the International Federation of Pharmaceutical Manufacturers Associations (IFPMA), several national governments (US, UK, Norway, The Netherlands, Sweden), the Rockefeller Foundation, the United Nations Children's Fund (UNICEF), the World Health Organisation (WHO) and the World Bank Group. GAVI received US$750 million over 5 years from the Gates Foundation and smaller amounts from other sources. It plans to spend at least US$150 million annually up to 2005 and has invited all countries with an income of less than US$1,000 per capita to express their interest in receiving support from the Global Fund for Children's Vaccines.

GAVI also provides an example of the governance problems that are emerging when private foundations, public sector agencies, multilateral institutions, private corporations and non-governmental organisations embark in joint efforts to finance the provision of an international public good. For example, some government representatives have expressed reluctance to provide GAVI with large-scale funding, until key issues related to transparency and accountability in the use of funds are resolved. In particular, they were concerned about balanced participation in the board, rules for appointing board members, statutes and mandates for officers, as well as the specific mechanisms for channelling contributions and managing funds. These difficulties are the result, among other factors, of rules for managing public sector funds which are much more stringent and cumbersome, because of accountability requirements, than those for private corporations or foundations (Bezanson *et al.* 2000: 35).

In some cases, members of a partnership appear reluctant to provide resources for overhead and administrative expenditures, preferring to focus on financing programme and operational activities. This may lead to situations in which members of the partnership try to leverage each other's money, but are not prepared to fund the basic costs of programmes and projects. Therefore, while partnerships between many different institutions can be an effective way of arranging for the provision and financing of international and global public goods, it is unlikely that they will become a widespread and preferred option for this purpose, until some of these complex governance issues are addressed.

4 Some implications of the conceptual framework

4.1 An approach to the evaluation of financing mechanisms

As the section 3 has shown, there are many mechanisms potentially available to finance the provision of international and global public goods. The convenience and feasibility of using one or another of these mechanisms will depend on a variety of circumstances and on the specific characteristics of the public good in question, as the examples in section 5 of this report will show.

Nevertheless, it is possible to give a general idea of the characteristics of the range of financing options, and to suggest an approach that could be used to evaluate whether a specific financing mechanism is applicable and preferable for financing an international or global public good. Rather than following the sequence of questions described in section 3.3 and depicted in Figure 3.3, which start from the nature of the international and global public good, this would require examining first, the main features of the financing mechanisms along several dimensions and then assessing their appropriateness.

Table 4.1 presents a table of financing mechanisms and dimensions to evaluate them, although the categories to classify financial instruments are rather broad. However, considered as a whole, these dimensions would allow to assess the *efficiency* of a particular financing mechanism, in terms of effort required to design and put it into practice, as well as its *effectiveness*, in terms of the impact it would have on the provision of the international or public good. It would be necessary to describe in greater detail the main features of a specific financing mechanism in order to apply the evaluation dimensions with more precision. The main dimensions that have been considered to evaluate a financing mechanism are:

- *Applicability and scope*, which refers to the variety of international and global public goods it can be used to finance. It can be narrow, broad or intermediate.
- *Amount of funds generated*, which refers to the total amount of resources it can generate, and whether it would be sufficient to adequately finance the provision of the international public good. This amount can be very large, large, moderate, or limited.
- *Sustainability of funding*, which indicates whether or not the financing mechanism can guarantee access to funding over time and on a stable and predictable basis. It can range from long-term to sporadic financing.
- *Fairness and equity*, which focuses on whether equal beneficiaries or producers contribute to the financing mechanism in a similar manner, and on whether there is a progressive element in the participation of unequal beneficiaries or producers that reflects their different capacities to contribute. It ranges from high to low.
- *Flexibility and capacity to adapt*, which indicates whether it is possible to change and modify the way in which the financing mechanism operates without cumbersome and difficult arrangements. This dimension varies from very high to low, via high and medium.
- *Administrative complexity*, which refers to the legal, administrative, logistic and record keeping burdens it imposes of those in charge of operating the financial mechanism, as well as the coordination and management demands it implies. It also ranges from very high to low.

Table 4.1 General features of financing mechanisms for international and global public goods

Financing mechanisms \ Dimensions			Applicability	Amounts generated	Sustainability	Degree of fairness	Flexibility	Administrative complexity	Political feasibility
Internalising externalities	Market creation or strengthening		Narrow	Moderate	Long term	High	High	High	Medium
	International taxes, fees and levies		Broad	Very large	Long term	High/ medium	Medium	High	Low
Private sources	For-profit corporations		Very narrow	Very limited	Sporadic	Very high	Very high	Low	High
	Not-for-profit corporations		Intermediate/ broad	Limited	Long/ Medium term	High	Very high	Low	High
	Individuals		Narrow	Limited/ moderate	Sporadic	Medium	Very high	Very high	Medium
Public sources	National	Developed countries	Very broad	Very large	Long term	High	Low	Medium	High/ medium
		Developing countries	Very broad	Very large	Long term	Low	Low	Medium	Medium
	International	IFIs	Intermediate	Large	Long/ Medium term	Medium	Medium/ low	Medium/low	High
		Int. org. and agencies	Very broad	Moderate	Long term	High	Medium	Medium	High
Partnerships	Combination of sources		Broad	Variable	Long term	Medium	Medium	High	Medium

- *Political feasibility and support*, which indicates whether the financial mechanism can mobilise political support from key constituencies for its implementation within a reasonable time frame. It ranges from high to low.

The ratings presented in Table 4.1 for financing mechanisms are based on judgments that reflect the experience of the authors of this report and not the result of empirical research. They are offered to stimulate and guide policy discussions on options for the financing of global public goods. Whatever adjustments, additions or refinements that might be appropriate, a case-by-case application of these dimensions should help to shift discussions of global public goods away from statements of moral imperatives and exhortations and help to anchor them in the practical financial aspects required for their provision.

It should help, for example, to identify cases where relatively small (i.e. low cost), simple and discrete collective action could produce disproportionately large and sustainable gains. An illustration of this may be taken from the World Meteorological Organisation (WMO). The WMO coordinates global scientific activity to provide prompt and accurate weather information for public, private and commercial use. Data from all over the world are needed to provide accurate weather forecasts that are essential to agriculture, to natural disaster preparedness and to the international airline and shipping industries. Such information can clearly be considered as a global public good. The accuracy and reliability of WMO's work depends on member-operated observation systems and telecommunication links, involving four polar-orbiting and five geostationary satellites and about 10,000 land observation stations. For many years, it has been recognised that the relative weakness of the entire system is that the vast majority of the land observation stations are in North America, Europe and parts of Asia. Vast areas of Africa are completely uncovered. The marginal benefit of installing an additional land observation station in Africa would seem to be vastly greater than its installation in Western Europe. This example suggests further that cases should be expected where reorienting of priorities will be more important than the provision of additional financing for the provision of global public goods.

A global public good by global public good-examination of the financing mechanisms and dimensions set out in Table 4.1 should also serve to bring burden sharing issues into better perspective. For example, the emphasis currently being accorded to what may be considered as the 'global' aspects of certain public goods (e.g. basic education) may miss the point that the burden and responsibility to provide and finance them falls largely at the national and local levels. Alternatively, the careful examination of other cases is likely to provide compelling evidence for policy decisions on where exceptions to the principle of subsidiarity need to be made.

A further potential benefit of the approach suggested in this section to evaluate financing mechanisms is that it should bring into sharper political and policy focus some very difficult issues involving the sustainability of financing for global public goods. Correcting the underprovision of a considerable number of goods that are currently being claimed as global public goods (see Table 3.1), and also ensuring their continued provision in the future, will depend on obtaining significant amounts of financing in a reliable and predictable manner. For example, to ensure water supplies and preserve watersheds throughout the globe, especially when considering continuing world population growth,

would appear almost impossible in the absence of adequate and assured long-term financing. This would suggest that there are no easy or obvious substitutes to creating an 'International Shared Waters Facility' to coordinate the mobilisation of massive global funds (Nicol and Steenbergen *et al.* 2001). To guarantee large scale and predictable financing, it may even be necessary to consider levying taxes or fees for this purpose, not only at the national but also at the regional and international levels.

The criteria and judgments outlined in this section refer primarily to the financing mechanisms associated with the provision of a particular international or global public good. A similar but much more complex exercise could be attempted to evaluate the efficiency and effectiveness of the international public goods delivery system as a whole. In this case, it would be necessary to calculate and add the cost of each of its elements – from raising public awareness and acquiring knowledge at one extreme, to engaging in the activities to produce it at the local level – and compare it with the benefits the international or global public good provides. This would be a rather daunting and probably not very useful task. It would make more sense to focus on the resources of all types (money, time, attention, management capacity, political capital), required for the critical components of a particular delivery system (such as the creation of a global public good regime, the establishment of a financing mechanism, the need to mobilise public awareness and support, or the changes in institutional arrangements and incentive systems).

Some critics of an international public goods approach to addressing global concerns argue that, in addition to the possibility of diverting resources away from development assistance, the transaction costs involved in defining a global public good and arranging for its delivery could be too high in relation to the benefits obtained. These are debatable propositions, the corroboration of which require empirical data and are beyond what is manageable in this report.

4.2 Some institutional and financing implications of the proposed conceptual framework

A second set of implications of the proposed conceptual framework is related to the institutional arrangements required to organise an international public goods delivery system. The conceptual ambiguities that have accompanied the growing attention paid to international and global public goods have made it difficult to obtain a clear and orderly picture of the different institutions involved in their provision. However, once the international community agrees on what precisely constitutes a particular public good, using the conceptual framework advanced in this report, it would be possible to design a delivery system and to identify the entities that should be involved in its provision.

This raises the general question of whether the international organisational architecture that exists at present is adequate for the task of providing global public goods. On the one hand, there is a large number international institutions that address regional and global problems, most of them created during the last half of the twentieth century, and many of these focus on development issues and on what are now considered as international and global public goods. On the other hand, as international organisations grew in number, size and complexity, and as their mandates shifted and evolved to accommodate changing circumstances, there emerged a vast, dense and at times almost

impenetrable forest of international organisations. At the beginning of the twenty-first century, the growing and increasingly complex set of institutional arrangements, a result of incremental adjustments over decades, has become rather heavy and unwieldy. Under these circumstances, it is difficult to expect that, without major improvements and strong support from member countries, the existing international architecture will be able to meet the challenge of establishing efficient and effective delivery systems for global public goods.

There appears to be ample scope for rationalisation and for establishing a division of labour to reduce unnecessary overlap, deal with ambiguities and identify missing institutions. An international public goods perspective, aided by a conceptual framework, such as the one suggested in section 3 of this report, may help to distinguish more sharply which tasks belong to certain international institutions. Among the particular questions that arise are what should be the respective roles of public agencies, private firms and civil society organisations, as well as those of developed and developing countries, and of the United Nations, multilateral development banks and bilateral agencies.[27] These issues lie well beyond the remit of this study, but application of the conceptual framework of Section 3 should provide a helpful point of departure to the further work that is needed and should help policy-makers to move beyond *ad hoc* approaches and arrangements.

Two additional issues relevant to the organisational arrangements for delivering international public goods are those of *economies of scope* and of *subsidiarity*, which have been raised by Sandler (2001). Economies of scope occur when the cost of providing two or more international public goods in the same institution is lower than when supplying them through separate institutions. This is because fixed costs are divided between several public goods, as they could be provided with the same administrative and support staff, office space and equipment, telecommunications facilities, and (possibly) professional and technical staff. Underutilised physical and technical infrastructure could be the source of economies of scope, and thus would argue for concentrating the provision of international public goods in an institution until it made use of all its spare capacity. At that stage, a decision would have to be made on whether to expand the facilities of that institution or whether to create a new one.

The principle of subsidiarity suggests that only those directly involved in the provision and consumption of an international public good should be involved in making and putting into practice initiatives for their provision. When the institutional arrangements encompass a wider range of participants than those affected or benefited by the spill-overs, it is likely that there will be an oversupply of the international public good. Conversely, when these arrangements are restricted to a smaller number of participants than the beneficiaries of the public good, undersupply will be the likely outcome. In

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[27] The established strengths and core competencies of many international organisations may not lie in the provisioning of global public goods. The current rush by many organisations to engage as agents in the direct provision of certain global public goods risks high opportunity costs in the dilution of core competencies and in the imposition of 'priorities' on client governments. For example, some regional development banks may hold neither comparative advantage, nor core competencies in the provision of most global public goods. Their strengths may lie in the design and financing of physical infrastructure, social sector programmes and related projects.

addition, such mismatch imposes higher transaction costs than would be necessary. Contrary to what is suggested by economies of scope reasoning, this argues for fitting the extent of the institutional arrangements as tightly as possible to encompass only those agents involved in the production and consumption of the international public good. Rather than using the 'spare capacity' of large international organisations, subsidiarity arguments highlight the advantages of focusing on institutions that are more restricted in scope for the provision of international and global public goods. As an example, Sandler concludes that in order to put this recommendation in practice, an institution like the World Bank should help to increase the capacity of other organisations like the regional development banks, even though this may appear to limit the range of activities in which it is engaged. Moreover, comparative advantage arguments from economic theory would suggest that, even if an institution like the World Bank were to have an absolute advantage in arranging for the provision of an international public good, it may be more appropriate for other institutions to actually do so.

Table 4.2 Division of labour for the provision and financing of international and global public goods

Actors / Functions	Private sector	Foundations and NGOs	Developing countries	Developed countries	IFIs	UN and regional orgs.
Defining and arranging for the delivery of international and global public goods (establishing the delivery system)	*	*	*	*	**	***
Supporting the core component of an international public goods delivery system	*	**	*	***	**	**
Supporting the complementary regional, national and local activities in the international public goods delivery system (capacity building, institutional development, knowledge brokering)	**	**	***	**	***	**

*Minor role; **Moderate role; ***Major role

Table 4.2 presents some preliminary suggestions regarding an appropriate division of labour in the provision of international public goods. It proposes that *the United Nations and the regional organisations should take the primary responsibility for defining and establishing arrangements for the provision of international and global public goods*. These institutions have political legitimacy and are representative of the diversity of national

interests that must be reconciled in the process of identifying whether a good, service or outcome should be considered as an international or global public good. During the last decade they have also acquired substantive experience with consultation processes with civil society and business organisations. In contrast with international financial institutions and, in particular the multilateral development banks, where weighted voting procedures are seen as biasing decision-making in favour of the richer and more powerful nations, the United Nations and the regional organisations (e.g. the Organisation of American States, the Organisation of African Unit, the Arab League), are perceived as more democratic. However, they are also considered as more inefficient, slow and bureaucratic, and therefore the United Nations and the regional organisations need not necessarily be involved in the actual provision of each and every international or global public good. In any case, after defining and establishing the delivery system for a particular global public good, these institutions could intervene in the provision of those for which they have a clear comparative advantage.

Therefore, the United Nations and regional organisations would play the major role to set in motion the political decision processes that lead to the establishment of international public goods delivery systems. In particular, they would have to determine what constitutes the *core component* and the *complementary activities*, and which entities should be responsible for each. The multilateral development banks and other international financial institutions should play a moderate role in such political decision processes, while developed and developing country agencies, foundations, private firms and non-governmental organisations would play minor roles, although they could convey their concerns and views through the UN and regional organisations.

The support and financing of the core component of the delivery system would the primary responsibility of developed countries, both for international solidarity and enlightened self-interest reasons, while United Nations, regional organisations, international financial institutions, foundations and non-governmental organisations would be playing a moderate role, and the private sector and developing countries would play just a minor role. Finally, the support and financing of the range of complementary activities linked to the provision of international and global public good would be the primary responsibility of developing countries and of the international financial institutions (World Bank, regional and sub-regional development banks, international funds), with the United Nations and regional organisations, developed country agencies, together with foundations, private firms and non-governmental organisations, playing a secondary role.

A similar scheme could prevail for the provision of regional public goods. Regional political organisations would play the leading role in defining and arranging for the provision of such goods, with regional financial institutions and developing countries in the region being in charge of supporting and financing complementary activities, and with developed countries being responsible for the core component.

While the emphasis has been placed on the division of labour between institutions, it is also clear that there are substantive potential gains from working together through partnerships that mobilise and complement the relative strengths of various institutions. However, questions such as the administrative complexity, coordination requirements, transaction costs and governance of partnerships, which were raised in the section 3, need also to be kept in mind when proposing that they be created.

A possible way forward in the provision of international and global public goods, involves the creation of flexible networks of institutions, possibly of a temporary nature, focusing on specific themes. These networks would involve all kinds of government, private sector and civil society entities, covering all the elements of an international public goods delivery system. Sunset and renewal provisions could be established to ensure that these networks do not evolve into self-perpetuating bureaucracies once their mission is accomplished, or once it becomes clear that they are unable to achieve it (Sagasti and Alcalde 1999; Sagasti 1999). There are many examples of such networks now in place, most of which take the form of partnerships. However, if the idea of defining and arranging for the provision of global public goods becomes widely accepted by the international community, it would be necessary to review such institutional arrangements with the aim of establishing efficient and effective international public goods delivery systems.

In practical terms, the International Conference on Financing for Development, which is scheduled to take place in early 2002 in Mexico, could recommend to the UN General Assembly, the establishment of a task force or working group with a temporary mandate to examine the definition, identification and characteristics of delivery systems for global public goods. Its function would be to debate these issues systematically and to give recommendations on priorities and on the structure of international public goods delivery systems. It would, of course, be no easy task to reach consensus on whether halting the spread of HIV/AIDS is more or less important than conserving biodiversity, or on whether maintaining peace and security should take precedence over mitigating climate change or maintaining global financial stability. Such choices, however, are currently being made, albeit implicitly, without much discussion, without the adequate and informed representation of many affected parties, and without attention to the asymmetries inherent in international power relations. This working group or task force may be seen as a first step to redress this situation, for it could address – more systematically than has been done to date – the question of the appropriate division of labour between established international organisations, and also point out gaps in the existing institutional arrangements.

5 Case studies

5.1 A note on the case studies

The applicability and usefulness of the conceptual framework developed in the preceding sections was tested in several case studies and analytical reviews, which focused on what are considered as 'global public goods' in the literature and on how to finance their provision. The general idea was to choose these studies and reviews in different fields, in order to check whether the conceptual framework was robust enough to accommodate and help systematise a diversity of common global concerns.

The following sections cover five global public goods: biodiversity conservation, climate change mitigation, research on HIV/AIDS vaccines, peace and security, and financial stability. The main idea has been to define such goods in a rather austere manner, considering those aspects of the common global concern that fit the characteristics of global public goods, significant cross-border externalities, relatively high degrees of non-excludability and non-rivalry. Through the application of the framework, it was possible to identify the components of the delivery system for each of the global public goods in the case studies and analytical reviews.

In the first case, the focus is on how evolutionary resilience and the possibility of developing useful products are related to the global public good, defined as *conservation of biodiversity*. In the second case, the global public good was identified as the *mitigation of climate change*, which leads directly to the reduction of greenhouse gas emissions that contribute to it, while the third case focuses on the *generation of knowledge for the production of HIV/AIDS vaccines*. Building on the work of the Carnegie Commission on Preventing Deadly Conflict, in the fourth case the global public good was identified as the *operational prevention of violent conflicts*, and in the fifth case the *maintenance of financial stability* was identified as the global public good.

An effort has been made to extract and summarise the pertinent parts of these case studies and analytical reviews, linking them explicitly to the various components of the conceptual framework for examining the provision and financing of international and global public goods. However, given the differences in the content of the studies and in the approach taken by their authors, it has not been possible to present their results in strictly the same format. Emphasis has been placed on a discussion of the financing implications of each case study. The full text of the case studies will be presented in separate working papers.

5.2 Financing biodiversity conservation as a global public good

5.2.1 Background

Biological diversity, or biodiversity, is a term used to describe the variety of life on Earth. The Convention on Biological Diversity defines it as '...the variability among living organisms from all sources including ... terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are a part; this includes diversity within species, between species and of ecosystems'.

The Earth's ecosystems can be natural or managed. Natural ecosystems provide humans with a vast array of marketable ecosystem goods, such as seafood, forage, timber, biomass fuels, natural fibres, and many pharmaceuticals, industrial products and their precursors. Managed ecosystems produce other goods, such as the output from agriculture,

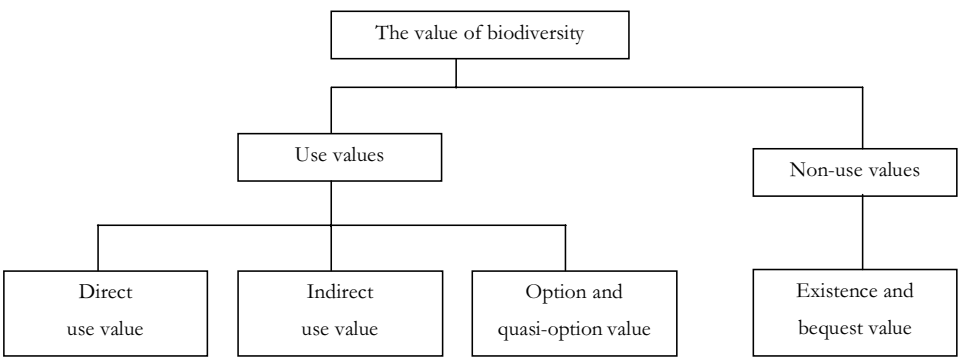
aquaculture, livestock, and plantation forestry. The harvest and trade of ecosystem goods represent an essential and familiar part of the human economy (World Bank 2000a).

Biological diversity at all levels (ecosystems, species, populations and genes) plays an important role in the response of natural and managed ecosystems to environmental stress. The wealth of biological interactions and populations' responses to each other and to the physical environment constitute the raw material for evolutionary change in both the short and long terms (World Bank 2000a). Genetic variation within species is the ultimate basis for evolution, the adaptation of wild populations to local environmental conditions, and the development of animal breeds and cultivated crop varieties which have yielded significant direct benefits to humanity. Losing genetic diversity like losing species diversity makes it even more likely that further environmental disturbance will result in serious reductions in the goods and services that the Earth's ecosystems can provide. Although scientists do not understand the specific role of every organism, 'the more species that compose wild communities, the more stable and resilient becomes the planet as a whole' as diverse ecosystems are more capable of continuing to function as circumstances change (Wilson, quoted in MacArthur Foundation 2000).

5.2.2 Biodiversity as a global public good

The Total Economic Value framework is a useful tool in isolating the global public good component of biodiversity (Pearce and Warford 1993). This framework classifies the value of biodiversity according to the total benefits provided by each of a series of types of benefits, which range from the very tangible 'direct use' values, through a set of increasingly less tangible 'indirect use' values, to completely intangible 'non-use' values (Figure 5.1).

Figure 5.1 The value of biodiversity



Direct use values: 'use value' is concerned with those elements of biodiversity, which can be directly consumed, traded or used as an input to commercial activities. Use values can usually be realised by individuals (or firms) and are hence *privately appropriable.*
Examples: plants or animals collected or hunted for nutrition, clothing or housing; the use of certain areas or ecosystems for activities such as sightseeing or tourism.

Indirect use values or ecosystem services: 'ecosystem services' are all those functions of the environment, which provide direct value to the well-being of humans whether on a local, regional or global level through the maintenance of a healthy natural environment. Contrary to the realisation of direct use values, however, the realisation of ecosystem services requires a social or public dimension, as the benefits of ecosystems are not privately appropriable.
Examples: flood control, the purification of water supplies at the regional level, or carbon sequestration and the stabilisation of the oxygen supply at a global level.

Option and quasi-option value: 'option values and quasi-option values' represent the value that is contained in having the ability to make choices in an uncertain future. Option values concern choices which people would like to be able to make if their preferences change. Quasi-option values concern maintaining the ability to react to future information (it is occasionally also referred to as the expected value of future information) independently from one's own current preferences and knowledge. Applying the *precautionary principle* in general policy-making expresses a will to preserve option and quasi-option values. Likewise, all policies which enhance the range of possible future actions (like the conservation of ranges of ecosystems) contribute to the enhancement of option values.
Example: one might not attach any present (nor even perhaps any future) direct or indirect use value to a given ecosystem, but one might attach value to the possibility of using the ecosystem in case one's preferences change. The stratospheric ozone layer had no known use value before the discovery of its capability to absorb UV radiation.

Existence or bequest values: 'existence values' refer to the fact that humans value ecosystems and biological diversity for their pure existence, and 'bequest values' for the possibility of maintaining them for future generations.

Source: OECD (1999)

Direct use values of biodiversity provide private goods. The global public good component of biodiversity is found in the *indirect use values*, such as the services provided by ecosystems, in the *option* (related to the uncertainty regarding the future use value) *and quasi-option* (expected value of future information) *values*, and in the *non-use values.* These values of biodiversity are provided as externalities, as their consumption by one agent depends not only on what that agent does but also on what others do or fail to do. They are also non-rivalrous – the consumption by one individual does not limit the consumption of another – and non-excludable (no-one is excluded from their consumption), a wide scope of countries are involved as providers and recipients, affecting multiple groups and having implications to future generations. Hence, for the purposes of this study, biodiversity as a global public good involves (a) environmental services of global importance, such as carbon sequestration in forests, (b) the potential use of biodiversity within protected areas and in managed ecosystems, from which humanity derives key inputs to its agricultural, medicinal, and industrial enterprise, and (c) the resilience and stability of ecosystems: biological diversity is crucial for evolution and for maintaining life sustaining systems of the biosphere. (Box 5.1).

Box 5.1 The importance of species diversity

'The concepts of resilience and stability are particularly important to understanding why we should care about species diversity. The point is that diverse ecosystems are more capable of continuing to function as circumstances change, as new stresses or challenges present themselves. Simplified systems of various kinds (social as well as natural) become brittle, less capable of adapting to change — the one fundamental condition that we can always count on. Diversity provides an array of alternate courses and diminishes dependence on single sources of whatever is needed to sustain a system. Diversity, in other words, is necessary for survival.'

Source: MacArthur Foundation (2000)

Underprovision of biodiversity as a global public good

Human activities are causing a loss of biological diversity among animals and plants. The 2000 IUCN Red List highlights many species that could be lost in the first few decades of the twenty-first century if the global community does not greatly intensify its level of support, involvement and commitment (UNEP 2001). Some highlights follow:

- The total number of listed species has increased dramatically in the last 5 years; for example, species of mammals have increased from 1,096 to 1,130 and species of birds from 1,107 to 1,183. The number of critically endangered species has also increased; e.g. critically endangered species of mammals has increased from 169 to 180 and the number of critically endangered species of birds, from 168 to 182.
- The list includes 11,046 species threatened with extinction, 816 species that have already become extinct or extinct in the wild, and 4,595 species listed as being data-deficient, or in the specific taxa or subpopulation-level assessments, totalling 18,276 taxa. The 11,046 species that are listed as threatened with extinction, although less than 1 per cent of the world's described species, include 24 per cent of all mammal species and 12 per cent of all bird species. In other words, one in every four mammal species and one in every eight bird species are facing a high risk of extinction in the near future. Approximately 25 per cent of reptiles, 20 per cent of amphibians and 30 per cent of fishes (mainly freshwater) are listed as threatened. The 2000 Red List includes 5,435 animal species threatened with extinction compared with 5,205 in 1996.
- The number of threatened inland water species has increased in all groups except for the molluscs. This indicates the extremely vulnerable nature of freshwater habitats. Species living in freshwater ecosystems are likely to be facing a much higher risk of extinction than their counterpartsk the terrestrial and marine environments.

Biodiversity loss is the expression of the underprovision of this particular international and global public good. In this case, it is very difficult to internalise the negative externalities produced by the extinction of species: as set forth by MacNeely and Vorhies (1995) 'species extinction cannot be reversed, no matter how much money is spent. The preferences of future generations are impossible to predict, present benefits are difficult to balance against future costs, and commodity value and moral value can be totally different. Further, the genetic resources that are the most rare and the most narrowly distributed are both the ones most likely to be lost and the ones least likely to be missed by the biosphere.'

Nevertheless, finding ways to give economic value to biodiversity may be essential for conservation. Some economists contend that biodiversity is decreasing at least partly because so few genetic traits, species, or ecosystems have market prices, the feedback signals which equilibrate market economics. Many economists maintain that prices, which accurately reflect environmental costs, would reduce consumption and keep the use of genetic resources in a closer balance with their sustainable availability. If the true value of genetic diversity could be included in the market system, they contend, markets could help conservation. The challenge is to develop the institutional structure that

would enable such values to be incorporated into market processes. Otherwise, market forces will lead to more conversion of habitat, and biodiversity loss, than would be either optimal or economically justified (McNeely and Vorhies 1995; Dixon and Pagiola 2000).

Policies that foster biological diversity, that is, policies that ensure the provision of services from the biosphere, the maintenance of the potential value of biodiversity and the resilience and stability in ecosystems, guarantee the provision of this international and global public good. This is done mainly by the conservation of biodiversity.

It must be noted that conservation approaches have slowly evolved from a focus on species and strict protection to a focus on the sustainable use of biological resources and sustainable ecosystem management. (World Bank 2001c) Ecosystem management, according to the Convention on Biological Diversity, seeks to meet human requirements to use natural resources, whilst maintaining the biological richness and ecological processes necessary to sustain the composition, structure, and function of the habitats or ecosystems concerned. While traditional biodiversity conservation initiatives such as the establishment and management of protected areas are important and necessary, they do not ensure the integration of biodiversity into sustainable national development. Much biodiversity is located in agricultural and forest landscapes outside protected habitats. Urban, industrial and infrastructural developments affect biodiversity in such landscapes as well as in protected areas. Hence, the conservation of biodiversity depends in large measure on how well policies and programmes in the economic sectors manage to address biodiversity.

Consequently, modern conservation approaches include (a) protected areas, which in turn have been categorised by the World Conservation Union (IUCN) along a continuum that ranges from strict protection to intensive sustainable use; (b) biological corridors; agrobiodiversity and pastoral systems; and (c) heavily modified landscapes, as long as their configuration and impact are compatible with broader ecosystem management goals.

This broader concept of biodiversity conservation will be considered, for the purposes of this case study, as the main vehicle for the provision of this global public good.

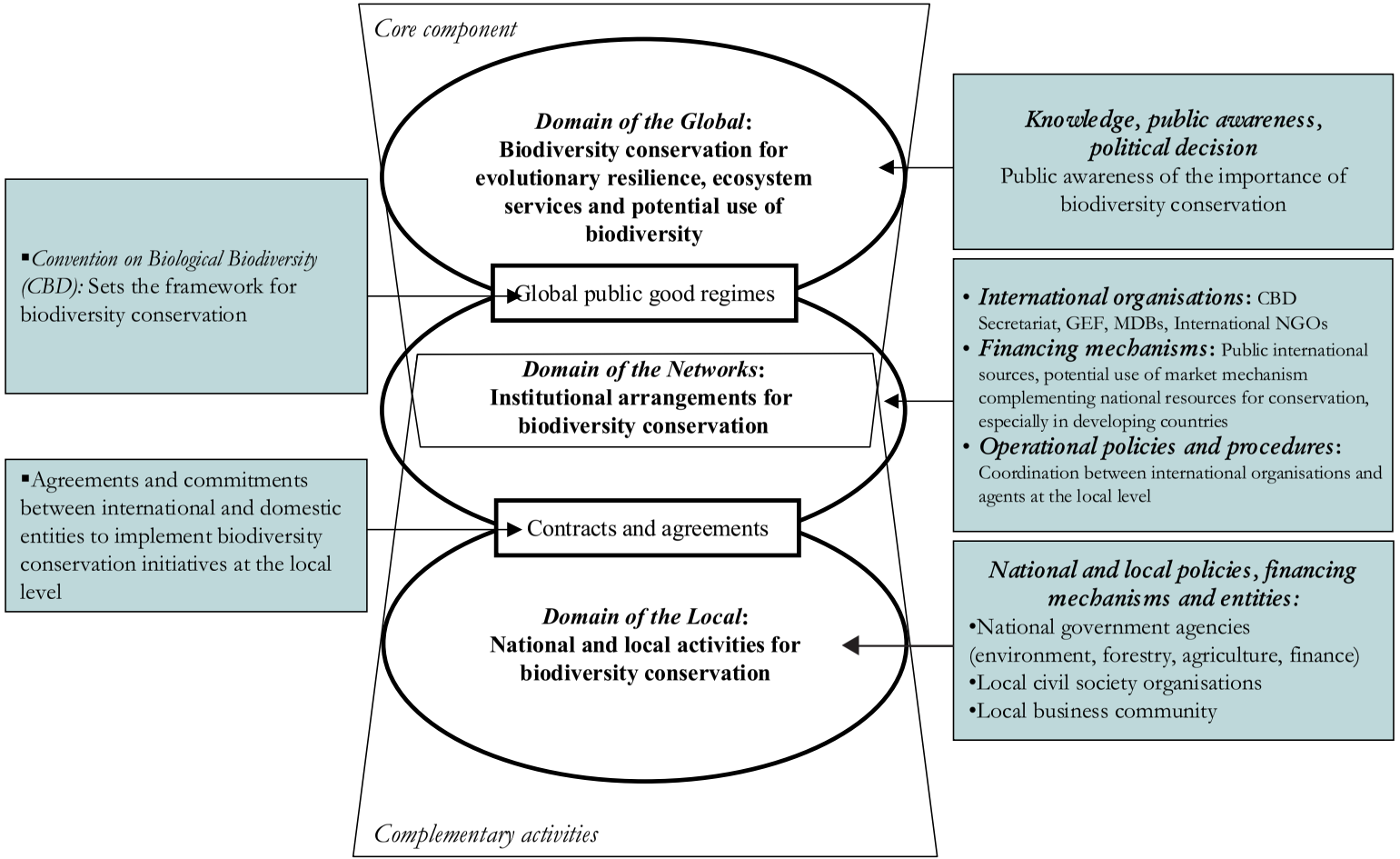
5.2.3 The structure of an idealised global public good delivery system for biodiversity conservation

As global, network and local instruments' institutions and agreements stand at present, it is possible to outline an idealised delivery system for biodiversity conservation. Using the blueprint established in section 3 applied to existing instrument and institutions, the following architecture emerges (Figure 5.2).

Knowledge, public awareness and political decision

There is knowledge, public awareness and a certain degree of political decision at the global level on the importance of biodiversity conservation, as expressed in the numerous international treaties and agreements already ratified. Yet this knowledge seems to be stored in a separate compartment from the rest of humankind's endeavours. It is not apparent as yet that this knowledge and awareness are integrated as concerns in every

Figure 5.2 Biodiversity conservation: An international public goods delivery system



step we take and every move we make as economic agents, as widespread biodiversity losses continue to occur.

Global public goods regimes

The Convention on Biological Diversity (CBD) has the characteristics of an international and global public good regime, as it establishes the general principles for the delivery system and allows for coordinated actions at the local level. It contains the necessary tools for the provision of biodiversity as a public and a private good, including the advice of a respected epistemic community. Linkage to national programmes, however, is still weak: (a) national biodiversity strategies are often declarative documents with no political or financial support, and (b) there is little or no integration of biodiversity conservation policies with development policies at the local level. This occurs either by omission, or by misalignment of explicit biodiversity conservation policies and other economic policies in general (perverse subsidies, trade incentives, for example). In addition, UNEP (2001) states that 'countries have experienced major constraints owing to lack of national capacities as a result of lack of adequate new and additional financial resources. This has led to unfulfilled expectations in key issues, such as transfer of technologies; equitable benefit-sharing mechanisms; rehabilitation and restoration of degraded ecosystems; and liability and redress.'

International organisations and partnerships

A large number of international organisations – governmental and non-governmental – participate in the delivery of biodiveristy conservation as an international and global public good. Given their diverse nature and intrinsinc flexibility, these organisations are essential for biodiversity policy implementation. Where everything else fails, these organised groups have the thrust and ingenuity to continue putting in place what they define as good biodiversity policies and projects. These entities, which operate at the domain of the networks, are in general well focused, active, and most of them have the necessary flexibility to adapt to beneficiaries' needs. Some have governmental interlocutors, whereas others deal with everyone but governments.

This vast array of institutions of all sizes, interests, political shades and *modi operandi* is not always an easy lot to handle. Despite coordination efforts, policy concerns vary and may be confusing for interlocutors at the local level. It is not clear that all, or even most of these organisations conform to the precepts established at the CBD. It is clear, however, that the delivery system of biodiversity conservation as an international and global public good would not work without these organisations.

Financing mechanisms

The Global Environment Facility (GEF) was selected as the financial mechanism for the Convention on an interim basis (see Box 5.2). As such, it is a very important and active international organisation, whose impact is positively felt in many countries. It has very slowly but surely conformed to the needs of beneficiaries, and more work in this direction is required, especially in the face of a low absorptive capacity in recipients.

Box 5.2 Biodiversity enabling activities: the Global Environment Facility (GEF) guidelines

GEF's guidelines for funding of biodiversity enabling activities express these particular developing countries' concerns and consequently devote additional financing for assessing capacity building needs and defining country specific priorities in the following areas:

1 implementation of general measures for *in-situ* and *ex-situ* conservation and sustainable use, including national plans, strategies and legislation
2 methodologies to evaluate and mitigate specific threats to components of biological diversity
3 biosafety, taking into account other GEF support that may be available for capacity building under the Cartagena Protocol on Biosafety
4 initial assessment and monitoring programmes, including taxonomy
5 conservation and sustainable use of biological diversity important to agriculture
6 design and approaches relevant to the implementation of incentive measures
7 access to genetic resources and benefit-sharing, and in particular:
   - assessment of existing policy measures and institutional/human capacity related to access to genetic resources and benefit-sharing,
   - formulation of access and benefit-sharing mechanisms,
   - developing measures for access to genetic resources and benefit-sharing; and
8 preservation and maintenance of biodiversity related knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles.

Source: GEF (2000), *Revised guidelines for additional funding of biodiversity enabling activities (expedited procedures)*, Washington DC.

In practice, however, GEF is not the only financial mechanism for biodiversity conservation. Donors and NGOs, in partnership with local NGOs and very seldom with Governments, finance biodiversity conservation projects of global importance in parallel to GEF's own efforts. Ground exploration reveals certain truths: GEF's financing is insufficient or inaccessible for certain groups, donors prefer to maintain control (both administrative and policy-wise) over their contributions, biodiversity may not be a priority for national Governments or multilateral development banks assisting them.

The existence of a number of donors for biodiversity conservation, although good in itself, sometimes brings about duplications and general disorganisation in financing, not to mention a huge workload for recipients who have to prepare financial and narrative reports in different formats to suit each donor. National governments should be able (but not always are, especially the poorer ones) to design the biodiversity strategy and organise donors around it, including GEF.

Operational policies and procedures

Operational procedures exist within the CBD, GEF, multilateral development banks, and within the interactions of these. These operational procedures are extremely useful,

but because of the need of consultation (within their membership and outside), tend to slow down the decision making process.

Agreements and contracts

Agreements and contracts are an important piece of the delivery system as they express the legal responsibilities of the contracting Parties. They are aimed to be the expression of willingness (political or otherwise) to carry out the activities indicated therein. Contracts and agreements are sometimes misused to express unnecessary conditionality or financial ties. For example, some GEF grant agreements have cross-conditionality with projects financed by other donors and labels them 'co-financing'. This is not accurate, as it is often the case that donors may have been occupied in these endeavours before GEF arrived; may have no interest whatsoever in having cross-conditionality, and do not wish to be called 'co-financiers' to GEF projects. In another example, certain donors provide grants or agree to debt swaps if recipients do a percentage of the procurement (or hire consultants) from the donor country. If biodiversity conservation is to be considered a global public good, financing should be free of conditionalities and ties, other than the ones directly linked to the successful provision of this international and global public good.

National and local entities involved in the provision of global public goods

National entities are important to develop a demand driven approach to biodiversity conservation and to mainstream biodiversity conservation (ensuring that national policies and programmes take account of biodiversity objectives). However, it is not clear at this point that national governments, NGOs, the private sector and civil society in general are prepared to take on these responsibilities.

Several elements explain this:

- General lack of budget resources and the crowding out of biodiversity expenditures by other public sector responsibilities such as debt service in highly indebted countries.
- Economists, who usually have an untrained eye for natural capital, prepare national development strategies, leaving out biodiversity conservation from national priorities. The public good value of biodiversity conservation is not appreciated.
- In very poor countries, environment and poverty compete for resources. This is a false dichotomy, but nevertheless believed in many national and international circles. This issue is of concern in the preparation of Poverty Reduction Strategy Papers (PRSPs), the central instrument from the Heavily Indebted Poor Countries (HIPC) Initiative. Biodiversity (and general environmental) preoccupations are seldom present in the preparation of PRSPs, as if these were topics to worry about later, when social problems are resolved.
- Some governments don't have the ability (lack of human resources) to deal with a biodiversity conservation strategy, regardless of its financing.
- There are physical barriers to address biodiversity conservation in certain areas of the globe: access, danger (drug traffickers, wild animals, armed conflicts, illegal loggers or hunters, health hazards, etc.), and weather, for example. There is no interest in putting money in unreachable or unpopulated places, particularly for politicians.

- Local NGOs may be barred from access to financing because it is not a political priority.[28]
- The private sector is unaware or neglects the importance of biodiversity, or economic agents respond to incentives that cause them to act against biodiversity conservation (market failure).
- Even if the financing exists, local intermediaries in the provision of this international and global public good do not have the tools to implement the project: this is the clear case of protected area managements who do not have enough knowledge to prepare operational and investment plans and budgets.

Becoming owners of, and carrying out national responsibilities are at the heart of the provision of biodiversity as an international and global public good. Even if everything else works, gaps in this area would represent true failures in the delivery system.

In sum, the exercise identifying the components of an idealised delivery system in the topic of biodiversity conservation demonstrates that even with the indicated disarticulations, deficiencies, lack of coordination and other inefficiencies, it is possible to conceive a delivery system ranging from the global activities and responsibilities to the regional, national and local activities linked to its provision.

As established in section 3, the way in which the core and complementary components of the delivery system relate to each other is perhaps the most crucial aspect in making arrangements for the provision of international public goods, and this will also determine financial requirements. In the case of biodiversity conservation, part of the global political responsibilities include the definition of what are the core and complementary components of the delivery system. A participatory approach to this process early on will ensure that the delivery system operates smoothly and properly, and that the financing will not lack in any part of the process.

5.2.4 Financing biodiversity conservation

Very few studies have been undertaken on the topic of biodiversity conservation funding.[29] Moreover, participants a the Workshop on Financing Biodiversity, convened by the Secretariat of the Convention of Biological Diversity in Havana in July, 2001 set forth the difficulties in estimating amounts devoted to biodiversity financing. Some of these difficulties arise due to a lack of a clear definition of biodiversity, and even beyond, to the identification of biodiversity components in other projects.

Market creation mechanisms in biodiversity conservation are being developed in the field of trading the environmental services provided by tropical forests, such as carbon sequestration, activities financed through the Protoype Carbon Fund, user fees for national parks, and the protection of watersheds. Market creation is possible for those values of

[28] For example, during the government of Alberto Fujimori in the 1990s, the Ministry of Economy and Finance in Peru explicitly turned down debt-for-nature swaps that were not for employment generation. In another instance, NGOs considered from the political 'opposition' were denied the right to work in national parks.

[29] Castro, G. and Locker, I., 2000, identify the few precedents for their study on biodiversity funding.

biodiversity included in the provision of environmental services. The examples illustrate, however, that public funding, both national and international, is necessary to finance the infrastructure provision activities that would support an eventual efficient market operation.

Individuals, corporations, and civil society organisations are in general sympathy with biodiversity conservation. Private sources of financing to biodiversity conservation are an indication of awareness of the importance of this international and global public good. This source of funding is increasing as more private firms incorporate environmental concerns in their operations. It is often the case, however, that these corporations do not have or know about the correct channels to direct their contributions to biodiversity. A delivery system that effectively links private (often transnational) capitals to the local provision of this international and global public good may prove to be an important catalyst for increasing finance from these sources.

A study on biodiversity financing in the Latin America and Caribbean region, conducted jointly by the Biodiversity Support Program, USAID and the World Bank, revealed that between 1990 and 1997, 3,489 conservation projects were funded by the 65 funding sources, for a total biodiversity conservation investment of US$3.26 billion (these figures do not include in-country public expenditure).[30] Multilateral and bilateral agencies provide close to 90 per cent of all funding, followed by NGOs (5.8 per cent) and foundations (3.8 per cent).

Public funding sources will continue to be needed to provide biodiversity as an international and global public good. Against the difficulties of market creation for these goods, official resources from national developing and developed countries, and international institutions will be required. These funds are also called for in the financing of enabling activities and for mainstreaming biodiversity: investment operations in traditional sectors, such as agriculture, forestry, energy, tourism, and urban and infrastructure development should gradually become more 'biodiversity friendly' (World Bank 2001c).

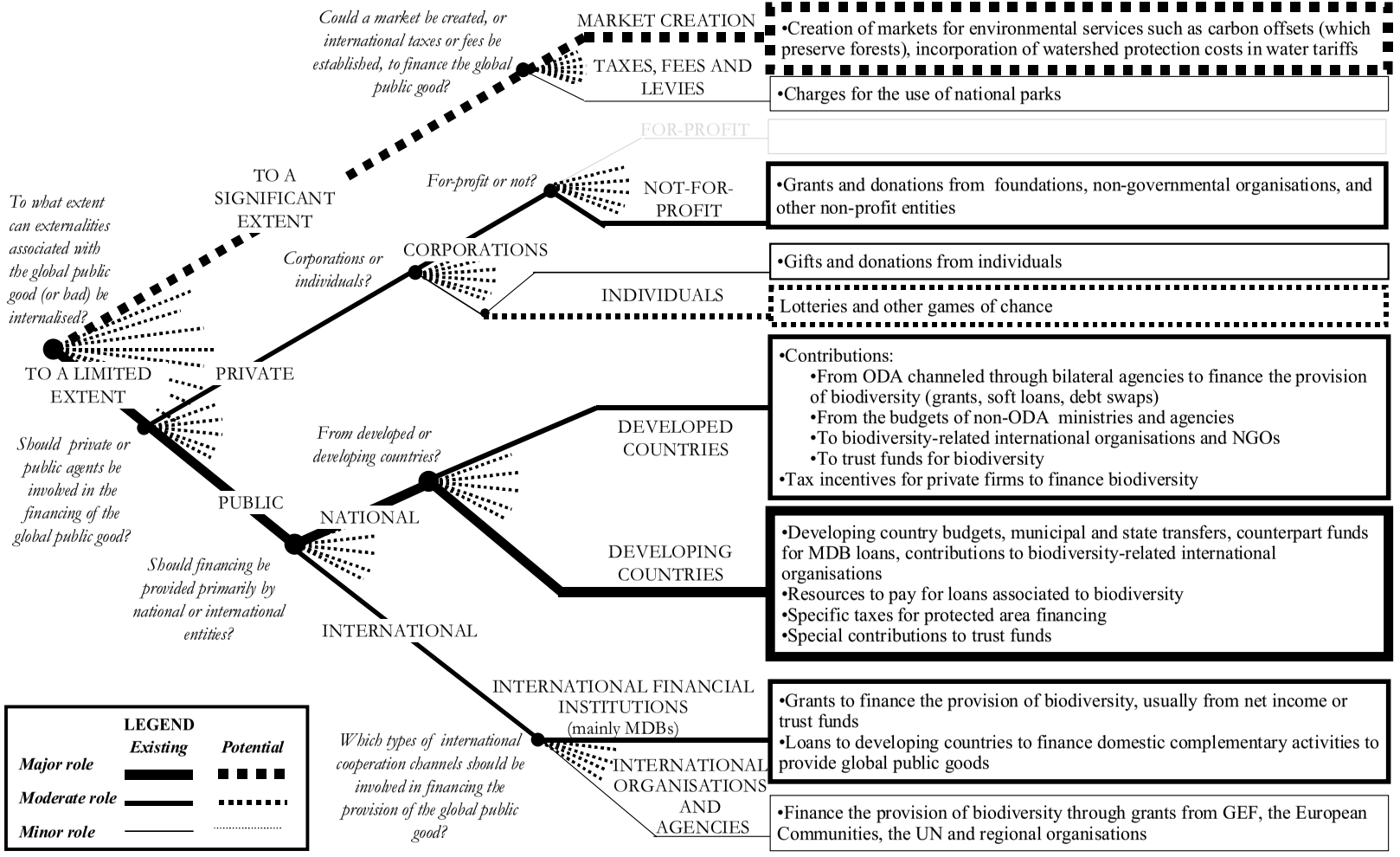
International institutions are expected to take the lead in their dialogues with developing countries, providing technical assistance and disseminating best practices in the matter at hand. Some of these institutions, particularly the multilateral development banks, also require mainstream biodiversity concerns within their institutions. Aligning policies within is a quality upgrade for policy dialogues with developing countries. Figure 5.3 summarises the various options available for financing biodiversity conservation.

5.2.5 Final remarks

Biodiversity as a global public good involves: environmental services of global importance, such as carbon sequestration; the potential use of biodiversity from which humanity derives key inputs to its agricultural, medicinal, and industrial enterprise; and the evolutionary resilience and stability of ecosystems. Biodiversity loss is the expression of

[30] Castro, G. and Locker, I., 2000, *Mapping Conservation Investments: an Assessment of Biodiversity Funding in Latin America and the Caribbean*, Biodiversity Support Programme and the World Bank: Washington DC: USAID.

Figure 5.3 Biodiversity conservation: Financing options. Decision tree



the underprovision of this international and global public good. Policies that foster biological diversity conservation will be considered, for the purposes of this case study, as the main vehicle for the provision of this global public good.

It is possible to apply the idealised concept of a delivery system presented in section 3 to biodiversity conservation using existing instruments and institutions. Naturally, much adjustments, fine-tuning, and coordination would be needed. The most important requirement, however, is the attention to capacity building in developing countries. A demand driven approach to the financing of biodiversity conservation can only be achieved by endowing developing countries with the necessary tools – or enabling activities – to participate actively and responsibly in such a delivery system.

The distinction between the core and complementary components of the delivery system facilitates the allocation of financial resources to this international and global public good from different sources. Once a political definition is reached, complementary activities will require resources directly contributed by developing countries, where the vast majority of biodiversity is geographically located. Developed countries also provide resources to these activities through their ODA budgets. Core activities should be financed through non-ODA budgets of developed countries, which in this case are net consumers of this international and global public good.

Finally, special care should be placed in ensuring that non-biodiversity policies and activities in provider countries do not place obstacles to this delivery system. This is done through institutional strengthening and policy alignment, and should also be considered eligible for financing as part of the biodiversity conservation delivery system.

5.3 Climate change mitigation as a global public good

5.3.1 Introduction and background: the politics of climate change

In many ways the threat of human-induced climate change represents a classic collective action problem. It is a problem that affects everyone and which, to different degrees, is caused by everyone. The scale of international cooperation required is, in many ways, without precedent. The sources of the problem are widespread and ingrained in the everyday practices of production and consumption. The scale of the problem spans from the global to the local level and requires changes, therefore, at all levels of human activity from the household upwards. This presents an enormous challenge for effective interventions.

There is also a clear North-South dimension, both in terms of vulnerability to the effects of climate change (particularly sea-level rise and changes to agricultural systems) and in terms of responsibility. This dynamic affects the success of any attempt to provide global public goods in this area. Industrialised countries have historically contributed to the problem far more than developing countries. Nevertheless, larger developing countries such as China, India and Brazil, experiencing rapid industrialisation, are seeing their emissions of greenhouse gases rise significantly. There is, in fact, an ongoing debate about whether and if so, in what form, developing countries should take on their own emission reduction commitments. There is a perception among some in the North that Newly Industrialised Countries (NICs), in particular, will be able to free-ride on the sacrifices made by Europe and North America. The related concern is that industries will uproot and relocate to areas of the world not covered by the provisions of the Kyoto Protocol resulting in 'carbon leakage' (Barret 1999).

In terms of impacts of climate change, developing countries are also in a weaker position to protect themselves from the adverse effects of climate change. Sea defences and other means available to wealthier nations to ensure that land is not flooded and that population displacement is not necessary, are not affordable to many developing countries. Their reliance for agricultural production on many low-lying areas that are especially prone to flooding from sea-level rise makes them especially vulnerable to the effects of climate change. This means that investments are required not only in providing the public good of climate change mitigation, but addressing the climate-related damage that is now inevitable by supporting adaptation measures for communities most vulnerable to adverse impacts.

Climate change clearly also has a strong inter-generational element in that the current generation is being asked to bear the costs of a problem that was also created by previous generations and whose most severe impacts will be felt by future generations. This creates an important political obstacle to action, or 'incentive gap' in that those being asked to make sacrifices now are not likely to reap the benefits of that action. The scientific uncertainties that also characterise climate change lend support to those who argue that the costs of action outweigh the benefits of protecting ourselves from a threat that may not turn out to be as serious as we currently predict. Attempting to address the problem of climate change is ridden with dilemmas such as this, which involve trade-offs with enormous implications for the future of humankind.

The response of the international community to the threat of climate change dates back to the 1980s when the scientific community was organised to provide state-of the-art reviews of the science of climate change to provide an input into policy deliberations. Assessments of our understanding of the climate change problem produced in 1990, 1995 and now 2001 have repeatedly underscored the need for immediate action justified by the latest scientific thinking. The negotiations towards the United Nations Framework Convention on Climate Change (hereafter referred to as the UNFCCC) began in 1991 and concluded with the conclusion of the Convention at the Rio Summit in 1992. The key provisions of the UNFCCC as they relate to finance are outlined in Box 5.3.

With scientific assessments of the severity of climate change becoming increasingly common and growing *public awareness* of the inadequacy of existing policy responses, momentum built for a follow-up to the Convention. Negotiations thus began towards a Protocol, which would set legally binding targets to reduce greenhouse gas (GHG) emissions, unlike the Framework Convention which only requires Parties to 'aim' towards stabilising their emissions at their 1990 levels by the year 2000.[31] The Kyoto Protocol was concluded in 1997 and has set differentiated targets for industrialised countries, while setting up a process to further elaborate joint implementation schemes, setting up an emissions trading scheme and to creating a Clean Development Mechanism. The key measures that relate to financing contained in the Kyoto Protocol are spelt out in Box 5.4.

However, the future of the Kyoto Protocol is currently in serious doubt, given the non-cooperation of the largest single contributor to the problem; the United States. The greatest single challenge to the further elaboration and effective implementation of the

[31] For detailed histories of the negotiations see Paterson (1993, 1996), Newell (1998, 2000), Newell and Paterson (1996); Mintzer and Leonard (1994).

Protocol is the refusal of the US to sign the agreement[32]. The stance of the new US administration brings into sharp relief the insights of work within International Relations, which asserts that international cooperation for public goods is often contingent on the *political support* and financial resources of the most powerful state in the international community (Hasenclever and Rittberger 1997). The US rejection of the Kyoto Protocol

Box 5.3 Financing obligations under the United Nations Framework Convention on Climate Change (UNFCCC)

The UNFCCC contains a large number of provisions that apply to all Parties, both developed and developing countries. In addition, it specifies certain obligations pertaining specifically to each of these groups of countries:

Developed country Parties are required to:

- provide new and additional financial resources to meet agreed full costs incurred by developing countries parties' in communicating information on greenhouse gas inventories and mitigation measures
- provide such financial resources, including the transfer of technology, needed by the developing country parties to meet the agreed full incremental costs' of implementing GHG mitigation measures
- take into account the need for adequacy and predictability in the flow of funds and the importance of appropriate sharing of burden among the developed country parties
- assist developing country parties that are particularly vulnerable to the adverse effects of climate change in meeting the costs of adaptation to those adverse effects
- take all practicable steps to promote, facilitate and finance, as appropriate, the transfer of, or access to, environmentally sound technologies and 'know-how' to developing countries to allow them to implement the provisions of the Convention, and
- support development and enhancement of endogenous capacities and technologies of developing country parties.

In turn, developing countries:

- may, on a voluntary basis, propose projects for financing along with, if possible, an estimate of all incremental costs of the reduction of emissions and increments of removal of greenhouse gases, as well as an estimate of consequent benefits, and
- may obtain financing for convention-related activities from bilateral, regional or other multilateral sources.

This finance is necessary to help developing countries submit national communications; meet the incremental costs of voluntary projects; combat the adverse impacts of climate change and undertake the adaptive measures deemed necessary.

Source: UNFCCC (1992)

[32] On being elected US President, one of George Bush's first moves was to make clear that he had no intention of signing the Kyoto Protocol. His rationale was that unless developing countries also sign the agreement, which he stated that they were currently unwilling and unable to do, the Protocol will have a damaging effect on the competitiveness of US firms.

Box 5.4 The Kyoto Protocol in brief

Commitments:

- Industrialised countries will reduce their collective emissions of GHG by an average of 5.2% below 1990 levels in the commitment period 2008–2012.[33]
- The USA has to reduce its emissions by an average of 7%; Japan by an average of 6% and the EU by an average of 8%. Other industrialised countries are permitted small increases, while others are obliged only to freeze their emissions.
- Developed countries are obliged to provide:
  - 'new and additional financial resources to meet the agreed full costs incurred by developing country Parties in advancing the implementation of existing commitments';
  - 'such financial resources, including transfer of technology, needed by the developing country Parties to meet the agreed and full incremental costs of advancing the implementation of existing commitments', and
  - 'financial resources for the implementation of Article 10, through bilateral, regional and other multilateral channels, which developing country Parties can avail of'.

Instruments:

- *Clean Development Mechanism*. The aim of this body is to assist developing countries in 'achieving sustainable development' and at the same time to help developed countries 'in achieving compliance with their quantified emission limitation and reduction commitments'. In effect, its purpose is to oversee the implementation of projects funded by developed states that want to accrue credits for emissions achieved overseas. Participation is voluntary and procedures and modalities for auditing and verifying projects are in the process of being worked out in the negotiations. Reduction credits will be certified by the CDM to ensure that projects add value to savings that would have been made in their absence (Article 12). Importantly from the point of view of financing, 'a share of the proceeds from the certified activities is used to cover administrative expenses as well as to assist the developing country Parties that are particularly vulnerable to the effects of climate change to meet the costs of adaptation'.
- *Joint Implementation*. Actions implemented jointly have to be 'additional to any that would otherwise occur' and 'supplemental to domestic actions'. Scope is provided to include 'verifiable changes in stocks of sinks' in Parties' assessment of their net GHG emissions (Article 6). Such projects will be certified under the CDM.
- *Emissions Trading* (the modalities of which have yet to be worked out) (Article 17).
- *Implementation* will be via national reports overseen by teams of experts nominated by the Parties.

Source: Peter Newell (1998)

[33] Parties are expected to have demonstrated progress in reaching this target by the year 2005. Cuts in the three important gases (CO_2, NH_4 and NO_2) will be calculated against a base year of 1990 and cuts in the long-lived industrial gases (hydrofluorocarbons, perfluorocarbons and sulphur hexafluoride) can be measured against a base year of either 1990 or 1995 (Newell 1998).

presents a classic example of the capacity of a hegemonic power to destabilise regime arrangements which they do not support. The withdrawal of US support for the Protocol lends urgency to the search for alternative ways of organising and financing collective action on climate change.

5.3.2 Climate change and public goods

It is difficult to assume that 'public goods' and 'public bads' can be clearly and unproblematically defined. Much work on global public goods assumes a level of consensus about what can be defined as a public good and what can be defined as a public bad. With climate change such a consensus has not been achieved. Despite a significant degree of agreement on the causes and proposed solutions to the problem, the science which underpins the problem has been subject to repeated challenge. Hence consensus about the level of political action that is appropriate to address the threat of climate change or the funding that it requires will not necessarily come from greater scientific consensus about the scale and impacts of climate change. Experience to date suggests that the political tools to tackle the problem exist, but it is the *political will* to implement them that is missing.

In this sense, debates about global public goods need to be explicitly *political*. The barriers to providing public goods and preventing public bads are, for the most part, political and this is where the analysis has to start. For example, if addressing climate change is seen as merely a technical or managerial question of allocating property rights to the atmosphere (i.e. nations have a right to pollute up to a certain level), creating markets in permits immediately leads into political problems of equity and the distribution of benefits.

Inter-generational justice also enters the climate change equation. Many of the rationales for taking costly action now in order to tackle a problem whose worst effects may not be felt for many decades, is that we have a responsibility to future generations. Both the 'precautionary principle' and the principle of 'contraction and convergence', which has entered the climate negotiations in recent years are aimed at addressing these problems. They provide a road map for policy responses, by, in the latter case, establishing ceilings for GHG emissions above which dangerous climate change is likely, and then devising a global carbon budget within which nations have a *per capita* entitlement to use carbon. Moving towards an optimal and safe level of carbon usage requires that some nations, in the first instance developed countries, would have to contract their use of carbon-intensive activities and others, primarily developing countries, would be entitled to expand their use of fossil fuels to meet basic development needs and so converge towards a *per capita* entitlement, which applies equally to all countries.

This makes the limitations of viewing climate change a collective action problem. Whilst the problem clearly has global dimensions and the problems of deterring free-riders, creating a shadow of the future and other incentives for cooperation evidently exist, it remains the case that if the G8 were serious about combating climate change, they could do so without creating global mechanisms of technology transfer and climate aid. They could do so by reforming the patterns of industrial and energy production that produce by far the largest proportion of greenhouse gases. The issue then is one of *political*

will. Constructing climate change as a problem of global cooperation is to some extent missing the point. Lack of international cooperation is not really the problem; the key changes in the behaviour necessary to deter activities that create the public bad of global warming and promote the public good of action to prevent further climate change, can be undertaken without cooperation, by addressing the sources of the pollutants that accelerate dangerous climate change.

5.3.3 The international public goods delivery system of climate change mitigation

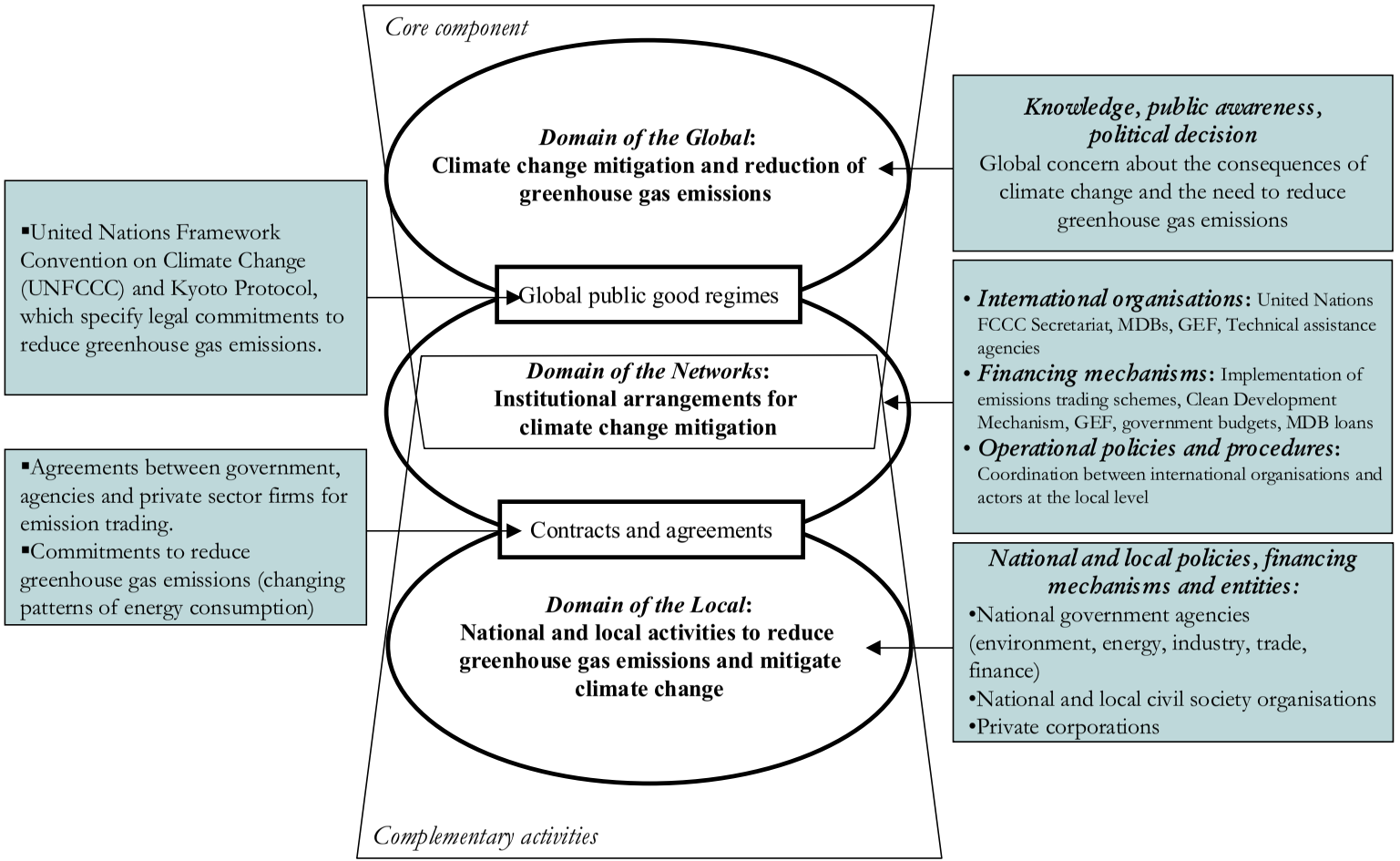
The global public good of climate change mitigation is placed in the *domain of the global*, which falls into the 'global commons' type global public good. The host of institutional arrangements, including international organisations and partnerships, supranational financial mechanisms, and operational policies and procedures that are in charge of ensuring that the global public good is made available, involve the actions of international organisations, such as the World Bank, the Global Environmental Facility (GEF), the regional development banks, the United Nations, involved in carrying out the programmes and projects engaged in reducing the use of fossil fuels and fostering a change to energy-efficient modes of production. Mediating between the domain of the global and of the networks, we find the *global public goods regime*, which consists primarily of the UN Framework Convention on Climate Change and other conventions, such as the Kyoto Protocol. There is also a broad range of national and local actors that participate in climate change mitigation programmes, such as the national governments and the business sector. Finally, in the interface of the domain of the networks and of the local, we find the c*ontracts and agreements* that specify the obligations that local agents would undertake as part of their participation in schemes and projects related to the UNFCCC (Figure 5.4).

Global public goods regimes in climate change mitigation

The Framework Convention on Climate Change is the primary broad global public good regime for climate change mitigation, and it is complemented by specific agreements, such as the Kyoto Protocol. Even though its implementation is still a matter of debate after being rejected by the USA, this protocol illustrates clearly the range of issues that are involved in the design of a global public goods regime.

The Kyoto Protocol specifies legally binding commitments by most industrialised countries to reduce their collective greenhouse gas (GHG) emissions by at least 5 per cent compared with 1990 levels, by the period 2008–2012. The modalities of many of the Kyoto mechanisms are not yet worked out, but a pilot scheme for Actions Implemented Jointly (AIJ) was launched following the first meeting of the Conference Of the Parties (COP1) in 1995. Many of the merits of emissions trading have been spelt out by its advocates, many of which focus on the potential of trading to generate capital for developing countries and incentives for developed countries to reduce their GHG emissions. The pilot phase for the AIJ was set up to gain confidence in the mechanism and to demonstrate its viability as a practical strategy for helping to meet the objectives of the UNFCCC. The pilot phase will continue until the Clean Development Mechanism

Figure 5.4 Climate change mitigation: an international public goods delivery system



(CDM) takes over registering credits for projects by transferring a part of the mitigation credits for a funded activity to the investing Party. Benefits accruing to the host Parties include financial and technological inputs, capacity-building, extra environmental benefits (other than climate change mitigation), and indirect benefits such as employment generation. For the investing Party key benefits include increased market access and expansion of demand for technology transfer, reduced net costs in meeting climate change obligations and increased international credibility.

The experience of AIJ to date, however, suggests that Parties have approached the scheme cautiously and the involvement of the private sector has been relatively low. This could be put down to lack of incentives in place during the pilot phase, given that credits were not permitted in a way permissible under the Kyoto Protocol.

The development of the CDM may, therefore, give a boost to this way of financing climate protection. Concern has also been expressed that many of the projects to date have been between Northern Parties, with only one AIJ project reported in Africa. From the perspective of the net delivery of the global public good, this may not matter, and given the disproportionate contribution of industrialised countries to the problem, it has ecological advantages. But from the point of view of moving towards a global model of development that can be sustained without causing dangerous interference with the earth's climate system, the concentration of project funding in the North is less desirable. If the foundations are not put in place for economies everywhere to make the transition to a sustainable energy future, gains in one area will be undermined by emissions growth elsewhere.

Such an approach also strongly reduces the incentives for developing countries to invest much commitment in tackling the problem. Addressing this imbalance will be key to the success of Actions Implemented Jointly and the CDM. The whole rationale for the scheme is that there are enormous savings to be made by funding emissions reductions activities in developing countries. Panayotou (1994) suggests, for example, that while reductions in CO_2 emissions from fossil fuel consumption in Japan and the EU might cost over US$100 per ton, in developing countries they would cost under US$10 per ton. However, while it makes little ecological difference where in the world the savings are made, politically it does and this will be the key barrier to funding future climate mitigation in this way. The scheme will have to be perceived to be fair as well as efficient in a global aggregate sense.

Permit trading is the other major mechanism to receive endorsement in the Kyoto Protocol. The idea being discussed is that permits would be allocated to Parties (including governments and potentially individual firms) on either a *per capita* or historical basis (grand-fathering) up to a level determined to be safe without introducing the threat of dangerous interference with the Earth's climate system. The permits would effectively constitute a license to emit a specified volume of CO_2. Those wishing to pollute above the specified level (in the near term, principally Northern governments and firms) would have to buy up permits from those who do not need to use their allocation (principally based in less-industrialised countries of the South). The idea is that this creates the required incentive for the North to save money by reducing its own emissions and an opportunity for the South to earn much needed capital in exchange for selling on permits.

There are many concerns about the detailed modalities of such a scheme, not least of which is how the permits would be allocated in the first place. There are enormous

distributional implications, where the North would benefit from a grand-fathering system, which takes as given, its currently high level of GHG emissions, and the South would benefit from the intrinsically more equitable *per capita* allocation, because of a combination of a comparatively low energy use and large population base. There are also concerns about whether such a scheme creates the right incentives to deter the damage to climate system, given that it allows the highest polluters to continue polluting as long as they buy up permits as a form of 'compensation'. It is also uncertain whether funds from the permits can be hypothecated for GHG emissions-reducing activities or whether to specify their use in such a way would constitute a form of 'eco-imperialism'. If the funds generated from the sale of permits are not spent on new technologies for transforming fossil-fuel intensive production facilities, however, and instead spent on new power plants on transport infrastructures that contribute to climate change, it is unclear that any net benefit would be achieved.

Rather than being an alternative to top-down systems of management, such a scheme would not be free of management costs. In fact, there may be high management costs such as those associated with monitoring and inspecting individual emission sources to ensure that the limit specified in the permit is observed, as well as requiring a system of approving and recording credits, offsets and trades among permit holders. Nevertheless, many remain optimistic that permit trading will generate greater emissions reductions at a lower cost than most competing proposals.

Whichever way the Kyoto mechanisms evolve, if they are to make a difference to developing countries and to simultaneously address both climate change and poverty alleviation in a win-win manner, they will have to address two key challenges:

- Ensuring that initiatives go beyond just capturing the 'low-hanging fruit' opportunities that are available in many areas of the developing world for least-cost emissions reductions. This has been a problem identified during the pilot phase of joint implementation. The challenge is to create financial and other incentives to encourage funding for more long-term projects aimed at changing underlying structures of energy provision and the orientation of infrastructures towards fossil fuel dependence.
- Using the CDM and other funding mechanisms to ensure that the energy needs of the poor are served. Again the pilot phase of joint implementation suggests that areas of sub-Saharan Africa, in particular, have not been affected by these initiatives. The challenge, therefore, is how to get private sector finance to invest in mitigation opportunities in the poorest areas of the South.

International organisations

Global public goods regimes in the area of climate change mitigation are supported by a range of activities carried out by international organisations and transassociational networks of organisations, as well as combinations of these, described in this section, which belong to the domain of the networks.

The World Bank. A development actor that has the potential to finance a number of important climate protection initiatives, as well as reduce the climate-changing impact of existing development actors, is the World Bank. It is an implementing agency of the

GEF, has a Climate Change Programme, runs the Prototype Carbon Fund and carries out a Clean Coal Initiative. Nonetheless, as will be explained in section 6, the Bank is far from integrating environmental goals more broadly in its activities. A recent report on the GEF in commenting on the Bank's activities found that it had not: 'taken steps to create staff incentives necessary to put global environmental concerns on a par with traditional bank business; that it is has not systematically integrated global environmental objectives into economic and sector work or into the Country Assistance Strategies (CAS) process, and that it has not adequately addressed the impact on the global environment of its financing of fossil fuel power development' (GEF 1997). Instead, the authors of the report recommend that the Bank should adopt public, measurable goals for the integration of global environmental objectives into its regular operations including goals relating to funding levels of GEF associated projects and integration into its sector work and the Country Assistance Strategy process, for example. Supportive of this, the IFC could maintain a database of its projects with global environmental benefits so that its mainstreaming of global environment can be assessed in the future. This will help the Bank 'begin a transition from its role in financing conventional power loans to a new role in financing sustainable energy technologies.' (GEF 1997)

The Global Environmental Facility (GEF). The Global Environment Facility has the potential to play a key role in the financing of policies and programmes aimed at tackling climate change. It has a broad mandate that covers a range of other environmental threats and is meant to act as a catalyst for measures to address global environmental problems rather than as a mechanism to meet all the financing needs of global environmental programmes. The climate change portfolio of the GEF is handled jointly by UNEP, UNDP and the World Bank.

The impact of GEF financing for climate change mitigation measures is thought to have been limited for a number of reasons. These include:

- Overly-complicated and costly working procedures
- Inadequate financial resources available to the GEF. This is in spite of leveraging additional resources from World Bank loans associated with GEF projects. This has been key in the climate change area where, since the pilot phase, 84 per cent of the total of funding for the World Bank's associated loans has been in the climate change area.
- The value-added of GEF-funded activities is not always clear because of a failure to ensure that the funds contributed are additional to developmental assistance.
- Relating to the above, is the use of the incremental cost (IC) principle to guide GEF funding activities. While it has helped to focus GEF resources on global environmental benefits, to facilitate the co-financing of projects and assist in the design of substitution activities (especially in the area of climate change), on the negative side it has led to projects being 'GEF-driven' rather than 'country-driven', the principle has been applied poorly to private sector funded activities and IC calculations have tended to overshadow other criteria for project selection, such that projects end up being over-costed and not value-for-money (Kumaran *et al.* 2001).
- Insufficient attention to positive global externalities from the creation of markets, in renewables, for example:

(i) a bias towards fossil fuels, which is particularly troubling given that reducing GHG emissions is one of the GEF's major priorities. In the financial year 1995–1996, the GEF approved grants of US$34.2 million for fossil fuels as opposed to US$18.4 million for projects involving renewable energy and demand side management (Tellam 2000).
(ii) an over-emphasis on compiling inventories of emissions from least developed countries, when the money could be better spent on vulnerability and adaptation measures
(iii) a failure to create synergies with other projects in similar areas in order to avoid duplication and maximise impact. A lack of financial planning for continuation of project activities after completion of GEF funding – thereby ensuring the ongoing financial viability and positive environmental impact of funded projects. This requires longer project implementation periods (5–7 years instead of 3–5 years) (GEF 1997).

International firms. Some firms, such as Shell International and British Petroleum, are setting up their own permit trading systems internally in order to reduce their total carbon emissions. This is a most interesting and welcome development, which could lead other large private corporations operating in many countries to adopt a similar approach. This could be particularly the case in the energy industry, although firms in sectors, such as chemicals, transportation, paper and pulp, among others, could be persuaded to join such initiatives.

Partnerships. Piloting and demonstrating sustainable energy projects is a key function that Banks and development agencies can perform to minimise some of the risks that deter private actors from investing in public goods. The Bank, the IFC (the Bank's private lending arm) and US-based private foundations, for example, have set up a Solar Development Corporation towards this end. Its aim is to provide business development services to local solar entrepreneurs and to provide credit for both solar businesses and purchasers of solar home systems. However, during the 1990s, only about 7 per cent of the IFC's energy lending went to renewables and energy-efficiency projects.

Partnerships have also been formed with the financial community. Those pushing for tougher action on climate change have increasingly been forging alliances with insurance companies and banks encouraging them to shift their lending away from fossil fuels and into renewables (Paterson 1999). The aim is to mobilise the finance sector itself to bring about the shifts in industry necessary to promote more sustainable and climate-benign forms of energy production. There are some indications that the financial community is changing, albeit very slowly, and starting to make climate impacts a feature in their investment choices. The insurance industry has a particular stake in promoting these changes, given that it has suffered in the past and will continue to suffer huge losses from pay-outs, following climate-related damage to properties that they have insured. For example, by 1995 'leading insurers from all the world's main insurance centres had spoken of the threat of bankruptcy from unmanageable catastrophe losses' (Leggett, cited in Paterson 1999: 25). This came on the back of hurricane Andrew in 1992, which cost the insurance industry US$20 billion in pay-outs on weather-related damage.

The fragile alliance between sections of the financial community and environmentalists seeking to advance action on climate change provides one example of the type of political coalition that will be necessary to carry reforms forward. It also underlines the point

again that many of the key changes necessary to fund climate protection and deter activities that accelerate climate change, will come not from more international cooperation alone, but from changes in industry itself and, in this case, from pressure from stakeholders with a clear self-interest in promoting action.

Operational policies and procedures

The various tasks carried by international organisations in the area of climate change mitigation are governed by a range of operational policies, decision-making procedures and regulations, which aim at effectively applying the principles embodied by the Kyoto Protocol.

Agreements and contracts and other lower level instruments

Placed at the interface between the domain of the networks and the domain of the local are the formal bilateral agreements, other lower level legal instruments, which regulate the relationships between actors with the aim of reducing their collective greenhouse gas emissions.

5.3.4 Financing mechanisms

The main financing mechanisms to support the global public good of climate change mitigation are indicated in Figure 5.5.

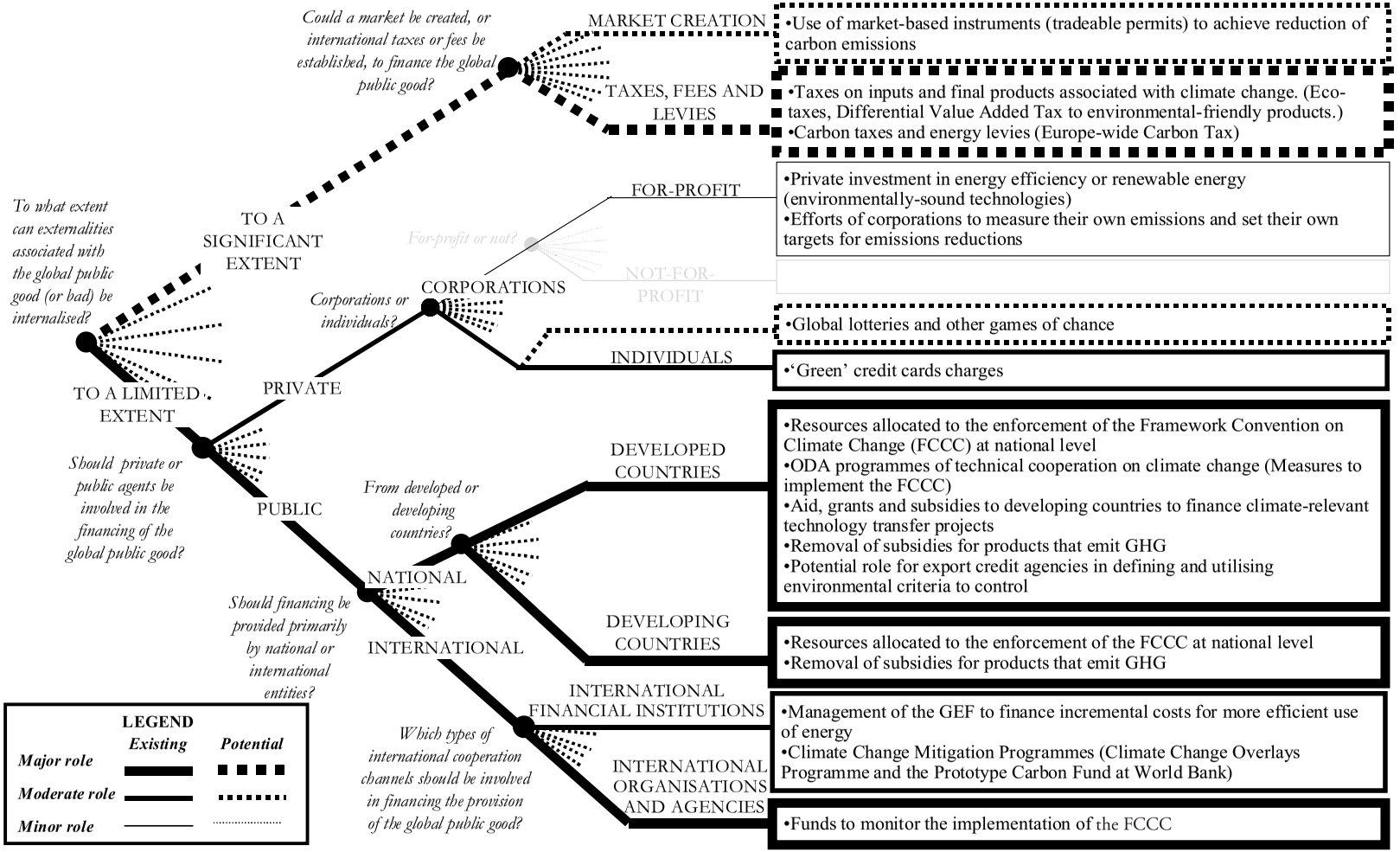
Internalising externalities

The creation of markets and the establishment of tax systems are two sets of instruments for internalising the externalities that contribute to climate change. For the first of these, which can be seen to include the Clean Development Mechanism, Actions Implemented Jointly and tradable emissions permits, the Parties involved in the transactions pay directly the amounts to finance the cost of actions to abate climate change.

Taxes on inputs and final products, whose production and consumption are associated with negative externalities, are a second set of instruments for this purpose, and may enjoy the advantage of relying on the administrative back-up of existing tax systems. No monitoring of the sources and levels of emissions would be needed and product taxes can be easily collected from producers at the time of exchange. For instance, eco-taxes on final products are particularly suited to controlling GHG emissions, because the aim is to regulate energy consumption and through higher prices consumers are made aware of the environmental consequences of their choices.

However, unless the taxes are set high enough to alter the profitability of products, technologies and practices, fiscal instruments can be ineffective at changing behaviour and politically they involve the risk of consumer rejection and resistance by industry, as has been witnessed in the UK with mass demonstrations against rises in the price of petrol. There has also been a lot of resistance to taxation measures both at national level and regional level. A number of national carbon taxes and energy levies have been fought by affected industries and many have been subsequently dropped (Newell 2000). The EU's attempt to introduce a Europe-wide carbon tax in order to meet its

Figure 5.5 Climate change mitigation: Financing options. Decision tree



UNFCCC obligations was ruined by a highly-organised and influential lobbying campaign by powerful sectors of industry that succeeded in effectively vetoing the measure.

Tax differentiation has been another tool used in Europe particularly to address transport-related emissions and to discriminate in favour of ecologically-desirable options. For example, buyers of cleaner cars are given a tax advantage and differential VAT (value-added tax) has been applied to 'environmentally-friendly' and 'unfriendly' products. Tax differentiation has been found to speed up the implementation of regulations (Newell 2000).

Private sources of financing

The UNFCCC secretariat report on this issue points out that it is difficult to analyse the investment pattern of FDI by climate-relevant sectors as its distribution in developing countries is not well documented and the statistics on the transfer of environmentally sound technologies (ESTs) and their impact on GHGs is difficult to determine (UNFCCC Secretariat 1997). Nevertheless, the Asian Development Bank found that almost three-quarters of private investment in low-income countries between 1990 and 1997 had gone into constructing new power generation plants using fossil fuels, while the remaining 25 per cent had gone into existing energy utilities. Only a relatively tiny amount of private investment had been made in energy efficiency or renewable energy.[34] A key role for developed and developing country governments is to create incentives for the private sector to carry some of the burden of funding initiatives to abate climate change.

Industry accounts for more than one-third of energy consumed world-wide and uses more energy than any other end-user in industrialised and newly industrialising economies. In a comparison of CO_2 emissions from the burning of fossil fuels by oil majors with country emissions from fossil fuel combustion, Shell emits more than Saudi Arabia; Amoco more than Canada; Mobil more than Australia, and BP, Exxon and Texaco more than France, Spain and the Netherlands (Greenpeace International 1998).

There have been many private sector initiatives from a number of leading energy firms and large users of energy. Companies such as BP and Shell, as well as companies from sectors that are high users of energy (e.g. the chemical industry), have started to measure their own emissions and set their own targets for emissions reductions. This carries benefits, such as saving money through reduced use of energy, first-mover advantages that come from developing new technologies and production processes to meet the targets and public and employee credibility, from being seen as an environmentally-responsible company (Schmidheiny 1992).

Public resources for financing

National resources. Developed countries finance climate change mitigation through grants and loans from bilateral agencies, contributions to multilateral funds like the GEF and

[34] Asian Development Bank, *Annual Report 1995*, cited in Tellam 2000: 184.

combinations of these. However, the UNFCCC Secretariat has not been able to quantify the total amounts involved due to differences in reporting.

Climate change considerations have also been finding their way into traditional ODA programmes, such as the German Agency for Technical Cooperation's climate change programme. The programme selects developing countries with high levels of GHG emissions, such as China and South Africa and targets their energy sectors with projects and programmes aimed at climate change protection. Similarly, the United States Agency for International Development (USAID) has developed a 'Climate Change Initiative' providing grants to address, among other things, policy reform, institutional capacity-building and technology cooperation and transfer. The 'Development Credit Authority' has also been evolved providing guarantees to help project developers overcome market barriers (USAID 1998). Aid, grants and subsidies will continue to be important, particularly to developing countries, for financing climate-relevant technology transfer projects.

There remains a need to evaluate what new mechanisms may be required to ensure that ODA and the use of export credit guarantees are supportive of the goals of climate change mitigation. There is much evidence that governments are undermining the net effect of measures aimed at meeting their commitments under the Kyoto Protocol, because flows of aid are still supporting fossil fuel intensive projects. It will be necessary to consider what conditions on investment and screening procedures for public and private finance may be necessary to ensure that broader social and economic policy goals do not undermine efforts to protect the world's climate.

Developed country governments allocate financial resources for climate change mitigation programmes through a variety of agencies and programmes, although it is very difficult to identify which proportion of expenditures are specifically devoted to this task.

Governments can also facilitate voluntary action through education and awareness-raising, as well as by providing financial incentives such as tax breaks and other forms of support to companies willing to accept GHG reduction obligations. As indicated earlier, reducing explicit or implicit subsidies for fossil fuels, a rather difficult political proposition, would also help considerably. To do this credibly, governments have to recognise and address their own contribution to the problem of climate change. State enterprises are themselves major sources of pollution, either directly through public production, consumption and investment or indirectly, through subsidisation of polluting activities and policies not integrated with climate policy objectives.

International financial institutions and international organisations. The World Bank, in addition to being an implementing agency of the GEF, has a separate Climate Change Programme made up of three components: Climate Change Overlays Programme; World Bank AIJ programme and the Global Carbon Initiative. The Bank also has a Clean Coal Initiative intended to encourage the use of 'environmentally-friendly' coal technologies. Helping to reduce uncertainty and promote the exchange of information, the Bank also runs 'EMPower Info', which generates information about environmental assessment processes, the environmental impacts of different energy sources and about pollution mitigation technologies. The Bank is also playing a part in advancing the goals of the global climate regime by launching a Prototype Carbon Fund, with investments from private sector firms, intended to facilitate exchange of emission

reduction units under the provisions in the Kyoto Protocol. At a regional level, the European Bank for Reconstruction and Development and the Franco-Belgian banking group, Dexia, have also launched a new private equity fund aimed at reducing energy consumption and emissions of greenhouse gases in Central and Eastern Europe (Carpenter 2001).

There are a number of barriers to the World Bank making a greater contribution to the financing of climate action. One of the most serious is the failure of effective policy integration: the lack of systematic integration of the goals of climate change protection into mainstream lending activities. In other words, the ecological spill-overs from existing policies are not currently internalised. One report found that less than 10 per cent of all Bank projects are screened for their impact on the climate (Sustainable Energy and Economy Network USA 1997).

There are also criticisms of the 'market-fixated' approach of the Bank, which prevents direct support for energy efficiency and renewable energy and the means the Bank uses to calculate the costs and benefits of projects, which because they do not use a life-cycle analysis, put energy efficiency technologies at a disadvantage. As a result, between 1995 and 1997, the Bank invested US$2.24 billion on the coal sector, while over the same period just US$61 million was spent on demand-side management and only US$5.9 million on one renewable energy project (Aidwatch 1997). Since 1992, the World Bank has spent 25 times more on climate-changing fossil fuels than on renewable energy projects and according to one estimate, the fossil fuel projects the World Bank has financed will, over the next 20 to 50 years, add carbon dioxide emissions to the atmosphere equivalent to 1.3 times the total amount emitted by all the world's countries in 1995 (Sustainable Energy and Economy Network USA 1997).

The Global Environment Facility (GEF) is meant to act as a catalyst for measures to address global environmental problems, rather than as a mechanism to meet all the financing needs of global environmental programmes. The GEF has provided support to assist developing countries in the preparation of their national communications, largely on the basis of block grants. The GEF has made resources available to 106 for such enabling activities (Srivastava and Soni 1998). The GEF climate portfolio is based on three Operational Programmes (1) removal of barriers to energy conservation and efficiency technologies that are already commercial, (2) removal of barriers to renewable energy technologies that are already commercial, (3) buying down the cost of renewable energy technologies that are not yet commercially viable. The working assumption behind this work is that there are cultural, institutional, administrative, technical, policy-related and financial barriers to market-penetration by climate-friendly technologies and the role of the GEF is financing the removal of those barriers, and thereby 'making it possible for win-win projects to be implemented' (GEF 1997).

5.3.5 Final remarks

On the basis of this account of how a global public goods framework can be applied to the case of climate change, some suggestions should bear the following things in mind:

The importance of politics: Despite the important recommendations arrived at by Kaul *et al.* (1999), it is not obvious how they would advance action on climate change. The climate case shows that creating profiles of the spill-overs or externalities that countries

are responsible for is not enough. There are extensive inventories of which greenhouse gas emissions each country is responsible for emitting, and while they provide a useful basis for calculating appropriate respective reductions, it is not enough to embarrass countries in taking action. The recalcitrant position of the USA, despite being recognised as the world's largest contributor to climate changes is a pertinent case in point (United States Agency for International Development 1998).

Similarly, closing jurisdictional gaps may be desirable for many reasons, but is unlikely to assist action on climate change. Strengthening regional arrangements (Cook and Sachs 1999) may be important for embedding action on climate change at multiple levels of economic and political action, but they are not a panacea where policy integration and the political will to implement it are missing. Closing the 'participation gap' (Kaul *et al.* 1999) will no doubt amplify the voices of those calling for further action to protect the climate. It may also serve to ensure that future financing mechanisms aimed at combating climate change are more sensitive to the needs and concerns of developing countries. The GEF, for example, has been criticised in the past for being more responsive to the needs of its Northern sponsors than the Southern recipients of its grants and projects. For countries to invest in the public good of climate change mitigation, there has to be a high level of political commitment for which participation is a prerequisite. If the participation of developing countries serves to ensure that financing mechanisms more effectively integrate the goals of equity and efficiency, they stand a greater chance both of gaining support in the regions in which projects are being funded and ultimately making a positive ecological impact. Once again the barriers are political and not technical.

The importance of the private sector: It is essential to mobilise the private sector to reduce their contribution to climate change and to increase their financial commitment to combating the problem. The private sector, often neglected in much of the global public goods literature, needs to be placed central, to understand the source of the public bad of dangerous climate change and the potential to fund the public good of action to prevent climate change. Initiatives that exclude the private sector will not succeed. This is so, because of the huge strategic importance of firms in the use, supply and generation of energy and because of the financial resources that the private sector can bring to bear on efforts to combat climate change.

Rather than focusing so much on states and international organisations, it is important to look in greater detail at which incentives are necessary to mobilise the private sector to provide public goods and which disincentives are from governments, NGOs and others in order to deter companies from further adding to the problem of climate change. Globalisation and shifting patterns of state-market relations have altered some of the social contracts that have underpinned the provision of public goods in the past, when the respective roles of government and business were more clearly defined, and now involve civil society organisations as well.

There is plenty of evidence to suggest both that where businesses lead, states will follow, and that state leadership is often a pre-requisite to shifts in the business community. Pressures on firms resisting action and demonstrating the benefits of investing in sustainable energy alternatives may be the key to shifting the position of key firms in the energy sector. At the same time, however, global public pressures may play a large part in catalysing the US government to act in the interests of all by pushing US firms, to play

their part in the global effort to combat what has been described as the most serious problem facing humankind.

5.4 Funding AIDS research

5.4.1 Introduction

The scale of the AIDS pandemic is now well known. By 2001, HIV had infected more than 50 million people and over 21 million people have died. These numbers will continue to rise rapidly, especially in the developing world. As yet, there is no known cure or vaccine. Although the antiretroviral drugs produced by pharmaceutical companies have proven to be somewhat effective in slowing the mortality rate their cost puts them beyond the reach of the vast majority of patients from developing countries.

The need for further research to provide new knowledge for the development of new medicines for AIDS and vaccines to prevent HIV infections is urgent. This was the focus of the case study that was part of this study on global public goods. Specifically, the terms of reference of the case study were to consider financing issues in AIDS research in the context of wider debates on global public goods. This task has been anything but straightforward, for two reasons. First and surprisingly, very little systematic and reliable financial information is available on AIDS research. Most research and development (R&D) data from the pharmaceutical industry are based on non-AIDS-related diseases. The task of assembling even the most aggregated statistics has, therefore, proved difficult.

Second, there are exceedingly high levels of confusion and conflict on the central issue of which kinds of knowledge qualify and should be provisioned as a public good, and even more on a global public good. At the most basic level, it is obvious that knowledge, which is made universally available in published form, is a global public good (i.e. it has the defining characteristics of very high degrees of non-excludability, is non-rivalrous in consumption and has a wide reach). By contrast, knowledge that is held as trade secrets is unequivocally rivalrous and excludable and is not a global public good. Beyond such obvious polarisation, however, the question as to what types of knowledge have the characteristics of public goods becomes complex and disputed. Patented knowledge is a key example of this debate. Some of the people interviewed for this study claimed that since patents were in the public domain, the knowledge they disclose can be considered a public good. Others suggested that because patented knowledge cannot be applied for a period of time without the permission of the owner of the patent then it should be considered as a 'delayed public good.'

When this general situation with regard to knowledge is applied to the generation of new medicines and vaccines, matters become yet more complicated as the generation of new knowledge on medicines and vaccines requires the integration of private knowledge, often owned by many different individuals and companies, with public knowledge. Stiglitz[35] draws attention to the fact that companies draw heavily on public knowledge

[35] Stiglitz, J., 1999. 'Knowledge as a global public good' in I. Kaul, I. Grunberg and M.A. Stem (eds), 1999, '*Global Public Goods: International Co-operation in the 21st Century*', New York: Oxford University Press.

when they file patent applications. Further complicating factors are found in the interplay between local and global knowledge, and between traditional and modern knowledge are other complicating factors. Thus, while the concept of knowledge as a global public good is at first sight appealing, on closer scrutiny there are a host of competing, contradictory and interacting factors which all contribute to making knowledge an impure public good.

5.4.2 Knowledge as a global public good: the case of AIDS research

The generation of knowledge and the creation of new drugs

For policy-makers concerned in ensuring that essential new knowledge is both produced and applied for the public good, matters are confounded yet further by the extend and speed of change in the methods by which knowledge is produced. Some 30 years ago, the process of creating new medicines and drugs was relatively straightforward and roles tended to be quite segmented. The public sector funded basic research that was carried out by universities and government research institutes and the results published. The private sector drew on this published public science, carried out applied research and development, performed clinical trials, obtained regulatory approval and eventually produced and marketed the new products. This has been modified in fundamental ways. Four factors are especially noteworthy.

1 The methods for producing new knowledge in the biomedical (and other) fields are far more complex. Governments still fund basic research that is carried out in universities and government laboratories and much of this is still published. Increasingly, however, universities and government laboratories now patent results that could have commercial benefit. They also do collaborative research with industry in what are public private partnerships (PPPs).
2 Industry too, has changed its approach. In part, this is because of the rise in the number of new biotechnology companies, which both rival and compliment the large pharmaceutical companies, and in part, because of the more general development of what are often referred to as 'Mode 2 methods of knowledge generation.'[36] The result is increased industry funding of basic research, joint research activities with universities and a much greater use of research networks, cross-licensing and the development of new approaches to the management of technology. The large pharmaceutical companies have maintained the ability to integrate knowledge and direct it to the production of new drugs.
3 Universities and national public research institutes have also benefited individually from their own patenting activities. Figures presented in the *Global Health Forum II:*

[36] Mode 2 refers to changing research practices that result in a new mode of knowledge production. In this Mode, problems are formulated and research is carried out in the problem-solving context, involving a complex interplay amongst specialists, users and funders. Research takes place in universities, government and industry laboratories but also research institutes, think tanks, small firms and consultancies. For more details on Mode 1 and 2 knowledge production, see Gibbons, M., Limoges, C., Nowotny, H., Schwartzman, S. and Trow, M., 1994.

Intellectual Property Rights and Global Health: Challenges for Access and R&D, for example, show that in 1998, the income from royalty earnings from patents and licenses was as follows:

(i) US$73 million for the University of California
(ii) US$62 million for Colombia University
(iii) US$40 million US National Institutes of Health.

4 The scientific and social foundations of intellectual property in the life sciences have shifted dramatically and have moved public policy into new and unfamiliar terrain. Until quite recently, intellectual property was accorded principally to products and complete processes (e.g. to chemical compounds, chemical processes and medical devices). Over the last two decades of the twentieth century, the modification of living organisms through genetic engineering has opened up entirely new possibilities. By inserting foreign or synthetic genes directly into an organism, scientists are now able to contemplate the creation of novel diagnostics and drugs based on human genes, crops with new or enhanced properties, and transgenic animals for use in agriculture.

These developments have opened up major commercial possibilities arising from genetic modification and the advantages of appropriate intellectual property protection. As a result, over the past 20 years, large numbers of patent applications on human genes, sections of genes, proteins, microorganisms, animals and plants have been filed. Many have been granted. Patents are now also being filed on the structural characteristics of proteins. Protein motifs, folds and subsections are already subject to the same welter of patent claim and counter claim as DNA sequences.[37] With the draft of the human genome sequencing project complete, many more patent applications for research tools, new drugs, vaccines and diagnostics tests involving the use of the estimated 30,000–49,000 human genes and their expressed proteins can be expected. As yet, few new gene-based products, medicines or diagnostic tests, have as yet reached the market. The impact of the large genomic and proteomic research programmes that many companies have invested in will, however, mean that an increasing number of these products should become available between 2005–2010.

The fact that many patented DNA sequences are essentially research tools through which companies aim to build strategic alliances, raises a range of basic questions about access to knowledge and the public interest. In the rush to patent all manner of gene sequences and proteins, there is a risk that the patent system may burden, rather than encourage health-care innovation. Academics as well as researchers from the private sector are filing patents on research tools that many would argue are simply discoveries and not inventions. Moreover, many scientists have expressed alarm that the current policy driven trend, led by the USA, to capture increasing amounts of basic biological information as intellectual property threatens basic research. These concerns have produced a vigorous debate over the consequences of the increase in IP, particularly in relation to public sector access to knowledge. The extent and magnitude of these structural shifts configure

[37] For example, one US patent (No. 5,8355,382) covers a computer-assisted method for identifying compounds possessing a similar structure to the hormone erythropoetin. Anyone using the three-dimensional coordinates to identify crystal structures similar to a specified peptide might infringe the patent.

a new approach to knowledge generation and this makes the previous distinction between public and private knowledge appear very simplistic. It also makes any discussion on knowledge as a global public good much more complex than before.

An illustrative case: Patenting research tools (the CCR5 receptor) in AIDS research

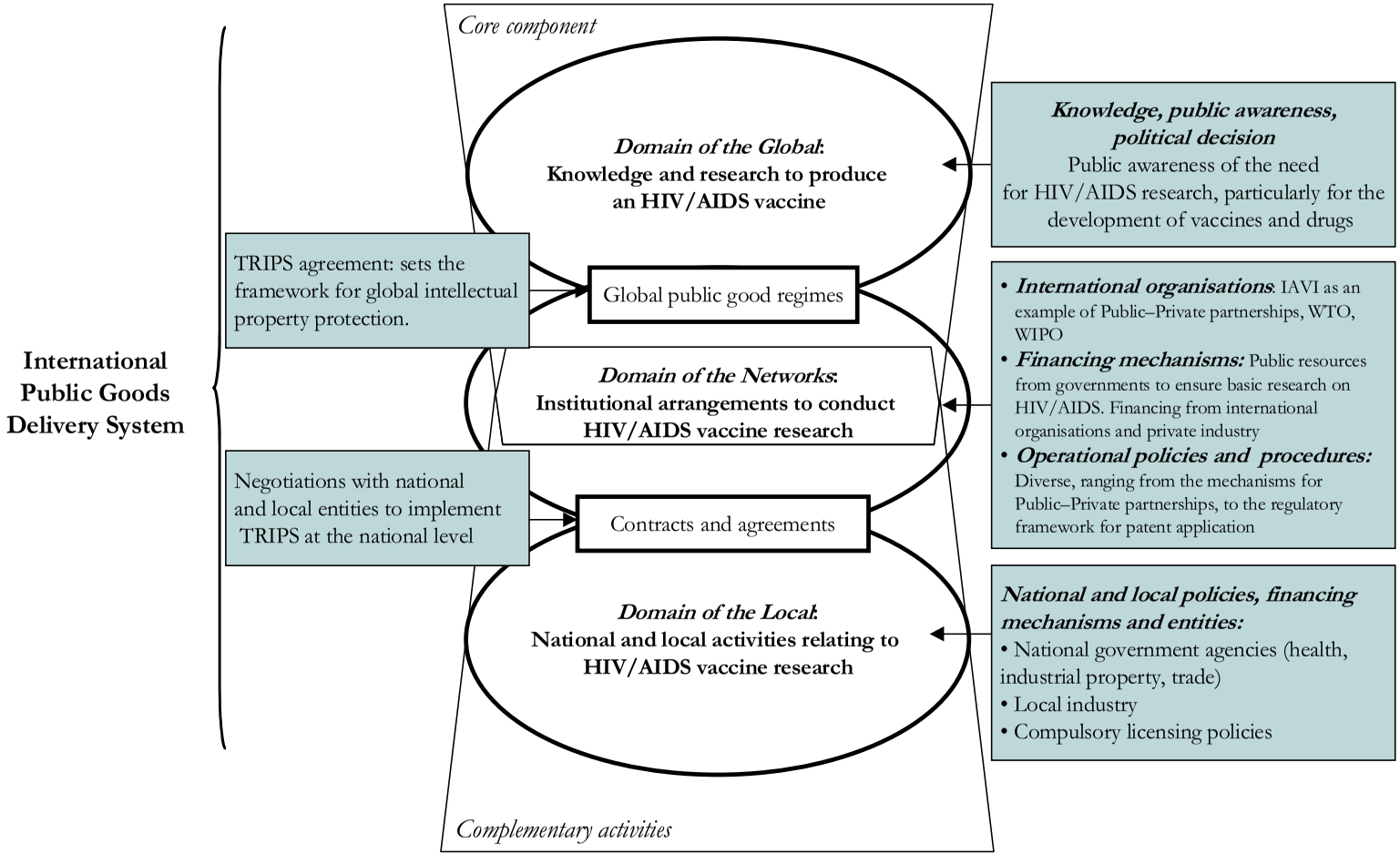
In February 2000, Human Genome Sciences Inc (HGS) was issued a US patent for the gene that codes for the human CCR5 receptor. The CCR5 receptor is the route by which the HIV/AIDS virus enters a host cell. When HGS originally isolated the gene for this receptor and filed for the patent, its 'best guess' of utility was that the CCR5 protein product would be a cell-surface receptor. At that time HGS was unaware of the receptor's role in HIV/AIDS and was expecting instead to exploit the patent primarily for the development of anti-inflammatory therapies. The subsequent crucial discovery of the link between the receptor and HIV/AIDS has led others to apply for patents on the linkage and one pharmaceutical has been licensed to develop AIDS therapies employing the receptor. Future therapeutic interventions may depend on the HGS patent and future research developments focussed on the receptor may give rise to additional complementary patents, requiring companies to cross-license or to pay two separate entities to work on one target drug.

The principal question that arises from this illustrative example is whether research tools such as the CCR5 receptor are actually deserving of recognition as inventions or whether they are in fact little more than cloned pre-existing information. Many commentators have taken the view that patents on DNA sequences are not inventions but mere discoveries and therefore should be ineligible for the protection that the patent system can offer. There is as yet very little empirical data to help elucidate whether the tying up of certain types of 'knowledge' arising from basic research in the form of patents has a restrictive effect on the value of research as a public good (see Figure 5.6). Some would be argue that a closer connection between research and its potential applications through the agency of intellectual property has the potential to lead to greater innovation. However, the rush to patent all types of biological materials has been criticised by researchers in both the public and private sectors who fear that the possibility of over-patenting will in fact diminish the potential utility of basic research. A further crucial question is to what degree does the tying up of knowledge acquired through research into patent applications impose restrictions on health-care innovation? Is such knowledge, which has a continuing role to play in the development of new diagnostics and medicines into patents, less of a public good than when unpatented?

The answer depends in part on the regulations within the national patent system. In the UK and most of Europe, there is a research exemption, which allows the use of patented products and processes in research provided that it is not for commercial purposes. So academics may use patented research tools, technologies and products without a license to undertake further research (see Figure 5.6). In the USA, the situation is much less clear and while a *de facto* research exemption operates, the underlying legal framework is uncertain.[38] Despite these exemptions, there is anecdotal evidence that the patenting

[38] Freire, M. (2001). Pers. comm. Director of Technology Transfer, NIH.

Figure 5.6 HIV/AIDS vaccine research: An international public goods delivery system



of research tools has at least two negative effects that bear directly on any discussion of public goods:

- Researchers may be deterred from working in a field where key research tools are patented
- Many public sector researchers are insisting on applying Material Transfer Agreements (MTAs) when allowing other public sector researchers access to research tools. This may limit later opportunities for research collaboration with or commercial exploitation by the private sector.

5.4.3 The structure of an idealised global public goods delivery system of AIDS research

The provision for AIDS-based research on the basis that it is a global public good is a highly complex process, involving a multiplicity of actors, differing and competing interests, huge asymmetries of knowledge, power and influence, actions in several sectors and at different levels. This section examines AIDS research against the main elements of the 'idealised' public goods delivery system presented in section 3 of this report.

Knowledge, public awareness and political decision

There is extensive public awareness about the disease and its ravages. There have also been important initiatives and decisions at the global level on the importance of coming up with both vaccines and treatments that will eliminate the painful human and development costs associated with HIV/AIDS. The Secretary-General of the United Nations has personally championed the proposition of a Global AIDS Fund to combat the disease among the poor and especially in Africa. Intergovernmental suggestions have been made for new funding at a level upwards of US$9 billion per year. It is not apparent as yet whether this awareness and political initiative will translate into the magnitude of response that has been called for. Most reports project that the disease will continue to spread, albeit at a slower rate than over the last two decades of the twentieth century.

Global public goods regimes

The TRIPS (Trade-Related Aspects of Intellectual Rights) Agreement provides a framework for global intellectual property protection and it has the essential characteristics of an international regime. The successful application of research in biomedicine will often involve the development of a new product, such as a vaccine, medicine or diagnostic test. These innovations are most frequently, but by no means exclusively, developed in the private sector. In industrialised countries, patent protection for such products has generally been in place for several years.[39] By contrast, patent

[39] These were the Paris Convention for the Protection of Intellectual Property (1883) and the Berne Convention (1886).

protection, particularly for products, has been absent in most developing countries and in some, such as India and Brazil, has facilitated the establishment of a substantial generic medicine industry. However the TRIPS Agreement, reached at the conclusion of the 1986–1994 Uruguay Round of the GATT (General Agreement on Tariffs and Trade) Multilateral Trade Negotiations, obliges countries who join to recognise and protect both product and process innovations in all fields of technology.[40] Compliance with TRIPS requires few major legal changes for the industrialised countries of Europe, North America and parts of Asia. Many developing countries however, will have to make much more extensive changes.

There is considerable dispute over the implications of the implementation of TRIPS for the generation and application of knowledge in biomedicine and specifically for a global public good approach to AIDS research. Among the contradictory positions adopted in response to this question four merit brief mention here. First, industry usually argues that strengthening patent protection through TRIPS will stimulate research in areas of concern to developing countries on the assumption that local industry in those countries would have an incentive to focus on relevant diseases.[41] The second position is quite diametrically opposed and argues that strengthening patent protections would effectively stamp out local industry and that patenting can sometimes act as a barrier to innovation, delaying the application of new knowledge to products in the marketplace and reducing potential returns. A third position argues that the regime itself is out of date, that current patent standards have not adapted to the challenges of the genomic age and are now largely inappropriate for biomedical science. Finally, many international development advocates argue that to realise new R&D opportunities from changes in patent law, governments must have already built up the infrastructure to innovate. Several of the better off developing countries such as India and Brazil built up their R&D infrastructures prior to the decades preceding TRIPS, through copying patented medicines by reverse engineering. Since such copying is now illegal under TRIPS, other developing countries who are signatories to the agreement will not have the opportunity to develop research capacity in the same way.

Thus, as an international regime, TRIPS may provide a highly asymmetric legal framework best suited to encouraging and rewarding research and innovation on new medical products in developed countries. For poorer countries, TRIPS may serve to limit the research and innovation and to limit access to the very drugs and vaccines, which are needed to combat major diseases such as AIDS.

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[40] Siebeck, W.E., 1990 (ed.) Strengthening protection of intellectual property in developing countries: a survey of the literature. *World Bank Discussion Paper* No 12, Washington DC: The World Bank.

[41] The credibility of this argument would appear to be undermined somewhat by the fact that there is, as yet, no firm evidence that pharmaceutical companies in India and Brazil, or elsewhere will have any more interest in investing in neglected diseases than global companies located in the USA, Europe and Japan. Cipla and Ranbaxy, for example, two of the largest research based pharmaceuticals in India, have aimed their research on global markets and on diseases that afflict the wealthy and elderly such as cancer and cardiovascular ailments.

International organisations and partnerships

Two international organisations have a key role in the determination and implementation of the global regulatory regime for intellectual property. The World Trade Organisation (WTO) oversees the TRIPS agreement while the World Intellectual Property Organisation (WIPO) has a treaty-making function (albeit without recourse to WTO dispute settlements), provides a discussion forum for intellectual property (IP) issues and has a role in capacity building in the management of IP.

In addition, a number of efforts to establish new global public private partnerships (GPPPs) are apparent. Compared with agriculture, there are relatively few truly international research institutions that undertake research on health. Most research of this kind is carried out in national institutions, and HIV/AIDS research is no exception. Efforts over the past 5 years to build partnerships and research networks appear to be modifying this.

One explanation for this shift in approach is the more prominent role that some NGOs such as Medecins Sans Frontieres (MSF) have taken in pushing new public health problems onto the international policy agenda. MSF has been particularly active in helping focus attention on the access to drugs issue for example. Tackling such problems has demanded the pooled resources of both public and private organisations. However, these joint ventures have emerged at a time when private for-profit organisations have also begun to recognise the importance of public health goals for their short and long-term objectives and a place for philanthropy in the corporate mandate.[42]

There is some disagreement about what constitutes a public private partnership, but a good definition is thought to comprise of three key components: (1) involvement of at least one private-for-profit organisation with at least one not-for-profit organisation; (2) shared efforts and benefits; (3) commitment to the creation of a social value (improved health) especially for disadvantaged countries.[43]

GPPPs in the health sector can be seen to fall into three main categories:

- Product development, e.g. International AIDS Vaccine Initiative (IAVI), Medicines for Malaria Venture (MMV)
- Product-based, e.g. the Malarone donation programme
- Issues systems-based, e.g. Roll Back Malaria (RBM), Global Alliance for Vaccines and Immunisation (GAVI).[44]

Partly as a result of the disagreement over what constitutes a PPP, these arrangements have been the target of a number of criticisms. There have been concerns about accountability, research duplication and sustainability of effort. The focus of the partnerships is often narrow (e.g., several have targeted AIDS, TB and malaria). There

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[42] Reich, M.R., 2000, Public private partnerships for public health, *Nature Medicine,* Vol 6 No. 6: 617–20

[43] Reich, M.R., 2000, Public private partnerships for public health, *Nature Medicine,* Vol 6 No. 6: 617–20

[44] Walt, G., 2001 Global public-private partnerships: implications at the country level, *International Conference on Stimulating Research & Development for Neglected Diseases,* 14–15 June 2001, Organised by Médecins Sans Frontières and the London School of Economics and Political Science, LSE

may also be inadequate participation from the developing countries and more discussion may be needed at the country level to gain improved insights into potential benefits. There are also within-country concerns about what happens after a designated period of access to medication. For instance, GAVI is about to launch a tetravalent vaccine in Mozambique, providing access for a 5-year period. What will happen after the 5-year period remains unclear. Partnerships may additionally make demands on capacity and divert resources from other health priorities with the result that inequity may be compounded rather than improved.

Thus, in spite of the emergence of new partnership initiatives and the promise that these may hold, it would appear premature to judge whether they will be successful in stimulating and supporting the production, through research, of the new knowledge required to deal effectively with AIDS, especially in poor countries. Two unique and recent public private partnerships focusing on vaccine creation for HIV/AIDS, IAVI and the EC's Programme for Action, are highlighted in the detailed working paper that appears as an annex to this report.

Operational policies and procedures

A highly diverse set of operational policies and procedures relating to international arrangements to conduct HIV/AIDS research may be said to exist. These would range from the public private partnerships outlined above to the detailed regulatory frameworks for patent application. Included also would be the operational policies of funding bodies such as the EC programme on HIV/AIDS, TB and malaria, the regulatory framework for patent applications which are filed at the WIPO, and the operational policies for the provision of WIPO technical assistance.

Agreements and contracts and other lower level instruments

Scientific and health-related research is mediated as a global public good through an increasingly wide range of agreements, contracts and other instruments. Many of these will simply relate to financial administration, but a significant proportion will be concerned with access and use of knowledge. In particular, MTAs, licensing agreements and patent applications will impact on the delivery of HIV/AIDS research. Obviously, such agreements are imperative components of the delivery system as they express the legal responsibilities of the contracting parties. They are aimed to be the expression of willingness (political or otherwise) to carry out the activities indicated therein. Since the 1960s, technical transfer agreements with many developing countries have been mediated by international development institutions and this has often introduced 'cross-conditionality' considerations, usually in relation to such macro-economic criteria as the level of public debt and fiscal deficit. For example, the provision of the financial and technical support required for 'sector-wide reform,' including sectors such as health or education, are often made contingent on macro-economic performance indicators. If the building of national capacity to undertake and to utilise the results of HIV/AIDS is to be considered a global public good, financing should be free of any such conditionalities and ties other than the ones directly linked to the successful provision of this global public good.

National and local organisations: building AIDS research capacities

Most AIDS research is carried out in the industrialised countries, although clinical trials require the active participation of researchers in the developing world. As a result there is growing recognition of the need to help build HIV/AIDS research capacity in these regions. The case for helping to build research capacity goes well beyond the need for clinical trials. Some of the other arguments are:

- scientific research capability is necessary in order to absorb and assimilate knowledge produced elsewhere
- local research capability is needed for the development of a local biotech and pharmaceutical industry
- the salary and many other costs of research in developing countries are much lower than in the industrialised countries. Hence more research can be carried out in developing countries for any given amount of funds – provided that research excellence is comparable.

Recent reports of the WHO Macroeconomics and Health Commission argue that these considerations make it essential that building research capacity in developing countries on HIV/AIDS be regarded as a global public good.

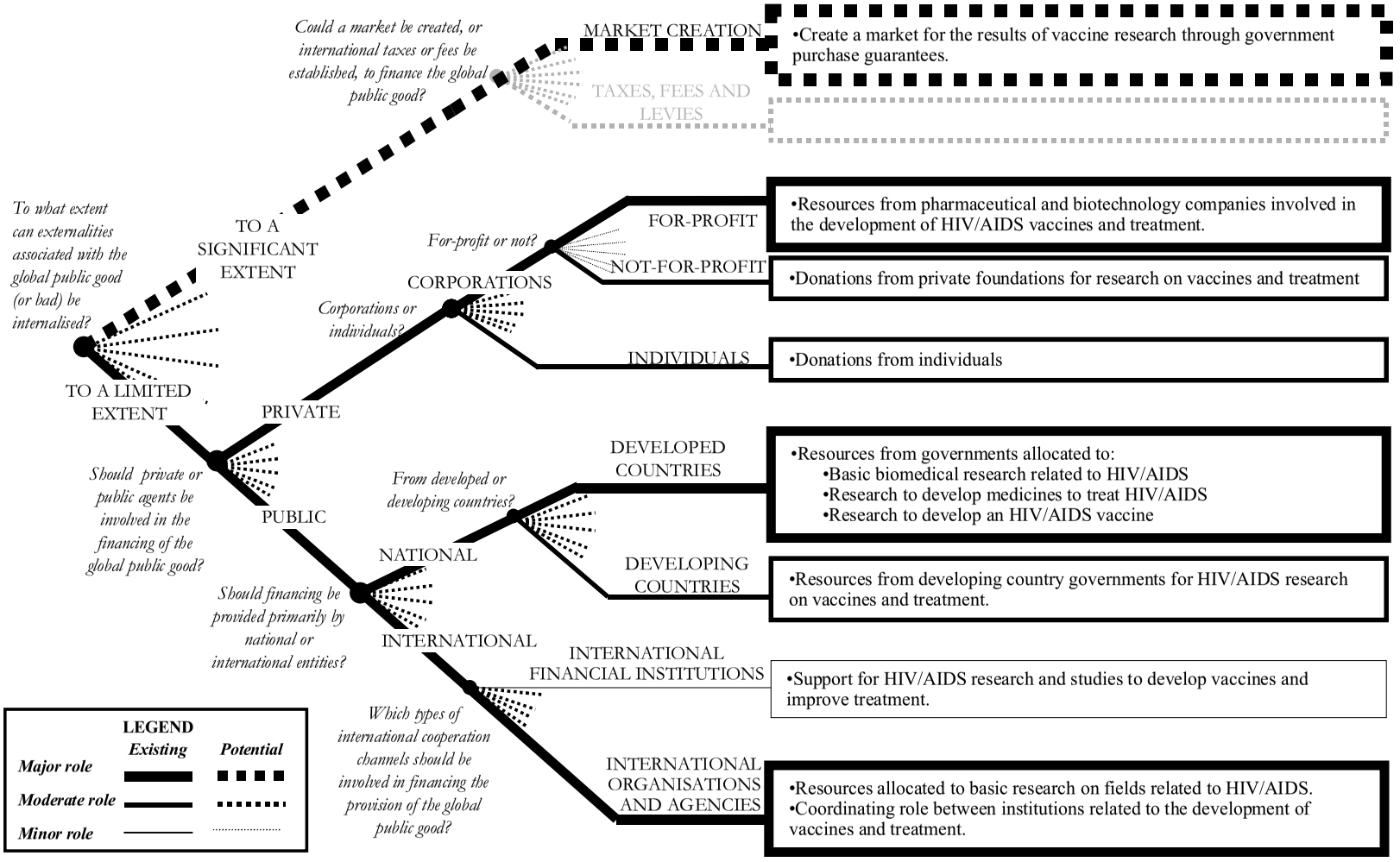
As has been stated in this report, however, to name something a global public good requires that all arrangements be in place to ensure its provision. The building of local scientific and research capacity in developing countries has proven over the last five decades of the twentieth century to be difficult, expensive and elusive. Some mechanisms are already in place for funding the building of such capacity, but there is widespread agreement that the needs far outstrip available resources. The EC and Sida/SAREC are among those donors, who do support international collaboration to build research capacity and to generate knowledge related to HIV/AIDS. However, the resources allocated to date are not large and substantially more resources need to be devoted to this objective. In addition, there is currently only a low level of bilateral donor support to research capacity building in developing countries.

The most ambitious programme and strategy aimed at building AIDS research capacity in the developing world has been devised by the National Institute of Health in the United States. This is part of the strategic plan for global research on HIV/AIDS. This programme targets studies on factors related to HIV transmission and the pathogenic mechanisms associated with HIV disease progression through studies in Africa, Asia and Latin America. The NIH report summarising this programme states:

> 'It is critical to the success of international studies that foreign scientists be full and equal partners in the design and conduct of collaborative studies that foreign scientists be full and equal partners in the design and conduct of collaborative studies and that they have full responsibility for the conduct of studies in-country. To that end, NIH supports international training programs and initiatives that help to build infrastructure and laboratory capacity in developing countries where the research is conducted'.

The report, however, does not specify the level of resources that NIH will contribute to this objective.

Figure 5.7 HIV/AIDS vaccine research: Financing options. Decision tree



In sum, the exercise identifying the components of an idealised delivery system in relation to research on HIV/AIDS demonstrates that even with the indicated inadequacies, conflicts and confusion, it is possible to conceive a delivery system ranging from the global activities and responsibilities to the regional, national and local activities linked to its provision. The exercise also highlights the extent to which deficiencies and problems exist within the framework of the main international regime pertaining to HIV/AIDS research (i.e. TRIPS), to the early and as yet experimental nature of new public private partnerships and to severe capacity deficiencies in the domain of the local (i.e. developing countries).

As established in section 3 of this report, the way in which the core and complementary components of the delivery system relate to each other is perhaps the most crucial aspect in making arrangements for the provision of international public goods, and this will determine financial requirements as well (see Figure 5.7). In the case of knowledge systems relating to HIV/AIDS, part of the global political responsibilities include the definition of what are the core and complementary components of the delivery system. As emphasised elsewhere in this report, participatory approaches to this process are required to ensure that the delivery system operates smoothly and properly, and that the financing will not lack in any part of the process.

5.4.4 Financing mechanisms

The funding of AIDS research

Many different types of research are conducted on HIV/AIDS research. For the purposes of this paper, and when examining the financing sources, we will focus on the three main categories of scientific research:

- Basic biomedical research related to AIDS: Explores the body's immune system, the molecular structure of the human immunodeficiency virus (HIV) that causes AIDS, and the ways in which the virus attacks the human body.
- Research to develop medicines to treat HIV/AIDS patients: Examines the impact of HIV on the human body and helps to identify the various medical conditions that affect people living with HIV/AIDS. Clinical research includes research conducted through clinical trials.
- Research to develop an AIDS vaccine.

5.4.5 Public resources

Developed countries national sources

In general, basic research in biomedicine and clinical research is funded mainly by governments in addition to the larger charitable foundations and some private/public partnerships. The research to develop vaccines is complex, but is also largely financed by developed country governments. It is important to note that most of the funding provided by governments is in fact provided by the NIH in the USA, which spends at least ten times the amount spent by industry on AIDS vaccine development. This research is directed largely towards the type of AIDS viruses (or clades) found in North

America. These are very different from the clades found in Africa, and it is not known whether the vaccines developed for the North American clades would also be effective in Africa.

Developing country national resources

The majority of developing countries, particularly the less-developed countries have very limited resources to dedicate to health-related research, especially where the research is relatively basic. In most African countries, virtually all the health-related research is funded externally. Industrial R&D is virtually absent. Where limited funds are available, they tend to be directed towards operational research. In the better-resourced developing countries, such as India, Brazil and China, government expenditure on research is more significant. In the private sector, namely pharmaceuticals, has developed on the basis on copying and the production of generic medicines, and there has therefore been very little R&D.

International organisations

International organisations such as *UNAIDS* do not actually fund research but instead play a coordinating role. The *European Commission* (EC) has initiated a new draft programme for AIDS, malaria and TB research involving an estimated E110 M over 5 years (see previously). The *World Bank* has donated US$1 million to IAVI, while IAVI has a projected income of US$35 million per annum. Although the *charitable foundations* make significant contributions to the funding of AIDS research, (for example the Bill and Melinda Gates Foundation, the Rockefeller Foundation and the Wellcome Trust), data are not yet available for inclusion in this paper. Finally, as noted earlier, it is not possible to calculate the amount that industry invests in AIDS research but the overall total is clearly substantial. By far the majority of these funds will be directed at medicines for the developed countries as opposed to vaccines.

5.4.6 Private resources

In addition to developed country governments, basic research is to a large extent financed by the larger charitable foundations. The private sector in the form of multinational companies and small biotechnology companies undertakes a relatively small amount of basic research. Investment by the private sector in AIDS vaccines is relatively modest. Representatives from the private sector explain the lack of investment by the poor economic returns obtained from producing vaccines in general, but for AIDS in particular they claim that the basic scientific knowledge does not yet warrant the investments which would be needed to produce a vaccine.

HIV/AIDS research to produce medicines for treating AIDS patients is carried out and funded almost entirely by industry (i.e. pharmaceutical companies). However, none of the companies will reveal just how much money they are devoting to this objective. The commercial incentives for developing effective medicines are sufficiently great that it can be assumed that the research expenditures are very substantial.

Table 5.1 Annual funding of AIDS vaccine research

Sponsor	Funds (US$ millions)
Governments	350–360
Multilateral + NGOs	30–40
Private industry	50–70
TOTAL	430–470

Source: IAVI 2000.

Table 5.1 summarises the data gathered on the funding of AIDS research. The data were provided by IAVI and give the estimated expenditures for the year 2000 on AIDS vaccine research.

In sum, the support of national governments for AIDS research is substantial. The US NIH has by far the largest institutional expenditure on AIDS research. The estimated total expenditure for the year 2000 was US$2.2 billion of which US$250 million was dedicated to vaccine research. The UK Medical Research Council funded AIDS related research of UK£14.5 million in the year 1999–2000. INSERM in France also makes a significant contribution.

While it is a relatively straightforward matter to identify the main funders of AIDS research, it is much more difficult to determine how much each spends on each of the different types of research. It is even more difficult to ascertain how much of the resultant knowledge is a public good, how much a delayed public good (freely available when the patent expires) and how much is a private good (a trade secret). All those interviewed in the study agreed that the overall picture was confusing and badly in need of exploration and clarification. It was not possible given the resource constraints of this study to do more than identify the main donors, and provide some statistics for the main categories of research.

The difficulty of collecting statistics on the first category is to know what to include and what to exclude. Basic biomedical research can be relevant to many issues and diseases. Some, however, is closer to the specific knowledge needed to understand HIV/AIDS – and hence of more direct value to those trying to find a cure or to develop a vaccine.

Should more public funding be devoted to HIV/AIDS research? A recent WHO/PHARMA Working Party which considered the needs for research funding for neglected diseases suggested that, with the possible exception of vaccine development, AIDS research was reasonably well funded and it gave higher priority to other diseases. With regard to AIDS vaccine research (currently receiving US$300–350 million per year) IAVI have estimated that an additional US$1 billion annually could usefully be spent through public private partnerships.

It is clear that a principal barrier to raising commitments to such a high level is the apparent lack of financial incentives to pharmaceutical companies for developing vaccines in general and an AIDS vaccine in particular. Indeed IAVI has estimated that in 1998 no more than 200 researchers, world-wide, were working on corporate R&D programmes in this area. IAVI has further estimated that in 2001 total corporate R&D expenditure to develop AIDS vaccines was about US$50 million.

In addition to the public-private partnership efforts outlined, this raises the question of whether a market involving appropriate and sustainable incentives could be created that would stimulate much greater private investment in AIDS vaccine research. This question is currently the focus of considerable attention under two broad categories of possible incentives. These are the 'push' mechanisms, which encourage greater investment in R&D, and the 'pull' mechanisms that aim to overcome market failure.

A survey of the attitude of a number of pharmaceutical companies to different push and pull mechanisms which might encourage greater investment in AIDS vaccine R&D concluded that at the present time scientific uncertainty is the most important reason given by companies for the low private investment.[45] The conclusion that this suggests is that most firms would favour push strategies that would involve public funding to subsidise development costs and reduce risk.

Specific proposals both on the push and pull side are still in quite formative stages and it is, therefore, not possible at this time to assess their likely efficacy. The two categories of proposal that appear to be most current and that may hold the most promise are those involving tax credits and others for the establishment of a vaccine purchase fund.

Tax incentive schemes to encourage firms in different countries to invest in R&D are not new. With specific reference to an AIDS vaccine, IAVI has reported that existing US tax incentive schemes have had little impact on encouraging research for AIDS vaccines and other diseases effecting developing countries. But new tax incentive schemes for vaccine development are now being explored by the UK, US and Belgian Governments. IAVI are supportive of the idea of tax credits for vaccine research, but point out that they should include the following elements:

- the tax credit should be a flat credit rather than an incremental credit, which reduces tax liability only on increases in investment in research
- for AIDS vaccine research the tax credit should cover both pre-clinical and clinical research.

The basic idea of an AIDS vaccine purchase fund would be to guarantee the market for a vaccine once it was developed. No money would be spent before the vaccine was available, but there would be legal commitment to purchase the vaccine when it had been developed. It is argued that a guaranteed market of US$250 million would be sufficient to encourage the private sector to invest its own resources to developing a vaccine. This figure also assumes that cost of the vaccine plus the inoculation would be US$3 to US$4 per patient. Were such a fund to be put in place and to prove successful, it needs also to be noted that further resources would be needed to ensure that a vaccine delivery system would be in place in developing countries for the effective delivery of the vaccine.

There are many attractive features about the idea of addressing this form of market failure with a vaccine purchase pre-commitment. But to provide a real incentive the pharmaceutical companies will have to be convinced that the funds would be available once a vaccine was developed – even if that took more than ten years and during that

[45] Reported in Batson, A. and Ainsworth, M., 2001, 'Private investment in AIDS vaccine development: obstacles and solutions'. *WHO Bulletin*, Vol 79 No. 8.

time donor priorities changed. The challenge will be to design the cast iron legal requirements that ensure payments are made. This may be a challenge that will prove easier for foundations to meet than governments.

In sum, there are a number of new and interesting ideas involving both push and pull mechanisms as incentives to major private investments in AIDS vaccine research. However, very few of these mechanisms have yet been implemented and it is difficult to know whether they would be effective. It may not be unreasonable to assume that a combination of push and pull mechanisms would be required before corporations would invest heavily in development of an AIDS vaccine.

5.4.7 Final remarks

1 Much debate and controversy exist in the identification of the global public good associated with AIDS research. To some it is the knowledge produced as a result of the research, to others it is the drugs or vaccines, which were or might be produced. For others, it is also the building of research capacity to carry out research, and for yet others it is restricted to a system of intellectual property rights to encourage innovation.
2 The case study that was carried out on HIV/AIDS as part of this report focused on research into the prevention and cure of AIDS as the public good. However, there is considerable controversy as to what exactly comprises the public good component. One view is that the global public good is confined rather strictly to knowledge in the public domain (i.e. published knowledge). Others hold that patented knowledge is also a global public good since, even if it cannot immediately and freely be utilised for commercial purposes, it is available as a delayed public good (i.e. the knowledge could be used publication of the patent and the product can be further developed and commercialised after the patent has expired.
3 The process used by industry to generate drugs and vaccines requires the integration of both public and private knowledge in complex ways. It involves the trading and licensing of patents, the formation of strategic alliances between companies and universities, and in-house research. This complexity makes it very difficult to unravel the relative public and private contributions to drug and vaccine developments.
4 The role of IP in restricting the generation and utility of knowledge arising from research is not straightforward and different constituencies have widely differing views. There is growing evidence that the over-zealous use of Material Transfer Agreements and patenting of research tools by both the public and private sector researchers risk the optimal utilisation of some research knowledge. Alternative approaches such as patent 'pooling' need to be explored. The example of the CCR5 receptor illustrates how easily a best guess can be rewarded although the likely implications for R&D are not yet apparent.
5 With regard to the international regulatory framework for IP, the evidence provided by the case study on HIV/AIDS has raised concerns about the potentially negative impact of TRIPS on the development of research capacity in the less developed countries.
6 The lack of financial rewards to be obtained from producing drugs and vaccines which treat the diseases of the poor has led to low levels of industrial investment in these areas (e.g. AIDS vaccines relevant to the strain of virus prevalent in Africa). Many suggestions have been made about possible incentives to encourage industry to

undertake more R&D on AIDS vaccines. The most noteworthy are the tax credit scheme provided by some governments to those companies prepared to invest in R&D in the so-called neglected diseases. There have also been a number of suggestions for an AIDS vaccine purchase fund, which would guarantee a market for companies that do produce a vaccine.

7 Public-private partnerships in the AIDS field are increasing. Currently, the best established of these is the IAVI, a highly innovative and sometimes controversial initiative. It will be some years before it will be possible to make a final judgment as to the success of IAVI and other partnerships in producing and delivering a vaccine.

5.5 Peace and security as a global public good: focus on operational conflict prevention

5.5.1 Introduction

The international security situation at present is starkly different from that before the end of the Cold War. While the current state of peace and security no longer appears to be under the shadow of nuclear warfare between big powers, it is characterised by many small usually intrastate wars all over the world,[46] which are not only fought by regular armies, but also by militias, guerrillas, terrorists and armed civilians, with little discipline and with ill-defined chains of command. Small conventional arms are the prevalent weapons. Civilians are the main victims and often the main targets. Humanitarian emergencies are commonplace, characterised by a large number of refugees and internally displaced persons. Moreover, most conflicts are within states rather than between states, often combining historical grievances, ethnic allegiances, political ambitions, religious loyalties, social disparities and economic deprivation, which were previously controlled or concealed by the Cold War or supraethnic governments. Another feature of such conflicts is the collapse of state institutions, especially the police and judiciary, with resulting paralysis of governance, a breakdown in law and order, and general banditry and chaos. This means the international interventions must extend beyond military and humanitarian tasks and must include the promotion of national reconciliation and the re-establishment of effective government.

Intrastate conflicts are today's deadliest political disasters generating massive negative *externalities*. It causes tremendous suffering to all population groups, almost always affects and involves neighbouring states, it often engages the interest of distant powers and international organisations, and clearly has a strong inter-generational element.

Although international response has been weak – as it is unclear where activities to manage and resolve conflicts and the principles that should guide them fit into the context of an uncertain order – there is a growing knowledge of the costs to the broader international community of intra-state conflict, which has led to approaching the issue of peace and security as a global public good. At the international level, global peace benefits all, much like the public good of law and order at the national level. In this

[46] In the period of 8 years from 1991 to 1999, there have been more than 100 cases of armed conflict, almost all within states (the most notable exceptions being Iraq-Kuwait and most recently Eritrea and Ethiopia) and involving more than 175 subnational groups and organisations.

sense, 'peace and security' meet the criteria of non-excludability and non-rivalry and have externalities that transcend countries, population groups and generations.

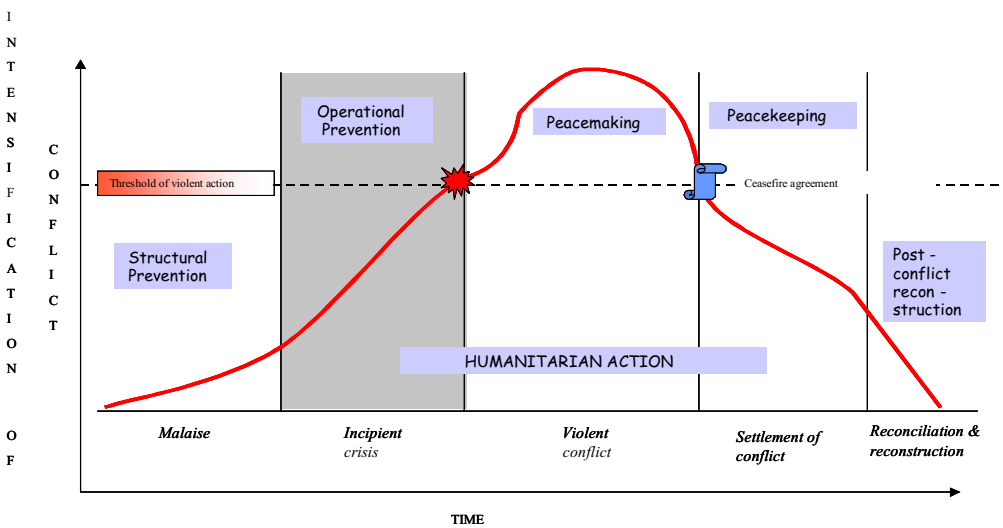
The global public good nature of 'peace and security' calls for international collective action. No nation alone may afford to procure the entire range of necessary equipment, personnel and resources for preventing conflict from escalating into war. The prevention of the outbreak, escalation and recurrence of civil strife necessitates the participation, coordination, and strengthening of a vast gamut of elements and actors.

5.5.2 Peace and security as a global public good: delimiting the terrain

Temporal dimensions of the peace and security process. A range of strategies and actions are involved in assuring 'peace and security', which have a temporal dimension corresponding to the cycle of a conflict. It is possible to identify five phases in the evolution of conflict situations, which require different approaches and call for specific kinds of actions. These are: malaise, incipient crisis, open conflict, settlement of conflict, and reconciliation and reconstruction (Guillmette 1995; Lund 1999). These phases can be grouped into five sets of widely used terms for interventions: pre-conflict development interventions or structural prevention tasks; operational preventive activities; humanitarian activities; peacemaking, peacekeeping; peacebuilding, and post-conflict reconstruction. The following provides a description of each of these tasks highlighting those that have a global public good quality.

Figure 5.8 traces the course of disputes that becomes violent conflict in two dimensions: the intensity of conflict (vertical axis) and the duration of conflict (the horizontal axis). The line that forms a bell shape is oversimplified to characterise the 'ideal' life history of conflict as it rises and falls in intensity over time. Indeed, the course of actual conflicts can exhibit many different long and short-life trajectories, thresholds and durations. The model, nonetheless, helps identify the range of interventions that relate to different levels of intensity, and discern the global public good component involved in producing the global policy outcome of 'peace and security' (shaded area).

Figure 5.8 The evolution of violent conflicts



The various stages in the violent conflict cycle can be described as follows:

- *Structural prevention: a role for development cooperation.* Structural prevention emphasises the need to promote stable and viable countries – that is, thriving states with representative government, the rule of law, robust civil societies and open economies with social safety nets. This is a task for development agencies. It involves identifying and supporting opportunities for peace from an early stage.
- *Operational prevention.* Operational prevention of deadly conflict aims at reducing risk factors and avoiding the escalation of conflict into war. Operational conflict is said to be more appropriate for the relatively shorter phases of incipient crisis. It relies on early engagement and combines political, economic and (if necessary) military measures to help stop a spiral of potential violence. Operational prevention can in effect be considered as a global public good, primarily because it can have rather high degrees of cross-border externalities and is to a large extent non-excludable and non-rivalrous. It involves the following fundamental activities:
  (i) *Early Warning* is based on measures to develop a system to collect information on trends and situations that may lead to *violent* conflict or humanitarian tragedies. Early indicators include widespread human rights abuses, increasingly brutal political oppression, inflammatory use of the media, the accumulation of arms, and sometimes, organised killings.
  (ii) *Fact-finding missions* are missions of neutral third parties in situations in which the positions of different parties and other political constraints make flexibility difficult. Fact-finding missions are designed to obtain detailed knowledge of the relevant facts of any dispute or situation in order that competent United Nations organs may then exercise, effectively, their functions in relation to the maintenance of international peace and security. Their presence in a country can also serve as a catalyst for conflicting, or potentially conflicting, parties to look for peaceful solutions.
  (iii) *Preventive diplomacy*, also known as Track II diplomacy, aims at preventing the possible collapse of non-violent modes of conflict resolution, through the use of indirect and *ad hoc* diplomatic contacts. Preventive diplomacy is not restricted to officials. Private individuals as well as national and international civil society organisations are playing an increasingly important role. So-called 'citizen diplomacy' sometimes paves the way for subsequent official agreements (Annan 1999).
  (iv) *Preventive deployment* is aimed at precluding the threat or use of armed force, or preventing the spread of existing armed conflict to new areas through pre-emptive positioning of peacemaking and civilian police (CIVPOL) forces. Preventive deployment has already had remarkable effects in the explosive region in the Balkans by 'drawing a thin blue line'. In addition, political preventive deployment consists of the positioning of political and/or human rights observers.
  (v) *Preventive disarmament* consists of measures to disarm combatants in the context of peacekeeping operations. Activities include curtailing the trafficking in small arms and light weapons and demobilising combat forces, as well as collecting and destroying weapons as part of the implementation of a peace agreement. In particular, much work needs to be done to halt the proliferation of small arms with which most wars are now being fought. In addition, exchange of information and other forms of transparency in armaments and on military matters in general help minimise the risk

of misunderstanding or miscalculation, and can therefore contribute to greater trust and more stable relations among states.

(vi) *Early humanitarian actions* consist of using humanitarian tools to prevent the outbreak or escalation of violent conflict.

- *Peacemaking and peacekeeping.* Peacemaking encompasses the long list of techniques for peaceful settlement of conflict embodied in the UN Charter and other international agreements. These include: mediation and negotiation, resort to the World Court, amelioration through assistance, sanctions, use of military force, peace enforcement operations. Peacekeeping involves the positioning of UN troops between warring adversaries following a formal cease-fire and with their explicit consent.
- *Humanitarian assistance.* Humanitarian assistance aims at satisfying the immediate and basic needs of people involved in conflict zones. Activities that fall into this category are part of a burgeoning package of essential requirements when both society and governance are 'victims' in urgent need. Such vitally needed requirements may include programmes to house the military, to establish police or security forces, or provide burial and grievance, to establish systems of property rights and compensation claims, to provide for mass trauma reduction, justice and prison systems, local credit schemes, support for recurring costs, food aid, water and sanitation, basic health, mine clearance, logistic support for the distribution of food and materials, and securing financial resources.
- *Peacebuilding and post-conflict reconstruction.* Peacebuilding and reconstruction are the terms in general usage for the process or programmes designed to help a country face the transition from conflict to peace. The primary goals of actions during the reconstruction period are to rehabilitate a society, which has been altered by a long period of conflict. While reconstruction programmes must focus on repair of extensive damage to physical infrastructure and stabilising the economy, all investment should be made with a larger goal of breaking the behavioural patterns formed during the conflict phase, reducing the insecurity and instability of a population in flux, and recreating institutions and social capital.

The approach to 'peace and security' appears to include not only the cessation of violence (negative peace) but also the elimination of latent violence, creating positive peace. The involves a focus redistribution of power and resources, notions of justice, human security, suffrage, equity, universal human rights. It brings into play a range of activities, such as: conflict resolution, 'alternative' dispute resolution, peace-making, peacekeeping, and post-conflict reconstruction. This approach is reflected in Hamburg and Holl (1999).[47]

A narrower, and possibly more fruitful, approach to the definition of 'peace and security' as a global public good, would limit attention to the provision and financing of operational preventive tasks that aim at identifying and handling the proximate causes of international conflict, and the catalytic factors that turn potentially violent situations into deadly confrontations. The focus is on detecting the first signs, arriving at a correct diagnosis

[47] Hamburg, D. and Holl, J., 1999, 'Preventing deadly conflict: From global housekeeping to neighborhood watch', in I. Kaul, I. Grunberg and M.A. Stern (eds), *Global Public Goods: International Cooperation in the 21st Century*, New York: Oxford University Press.

and co-ordinating an overall approach to prevent an incipient crisis from degenerating into conflict. Hence, the *operational prevention of deadly conflicts* could be properly defined as a global public good, where the desired policy outcome is peace and security. These activities may be truly seen as a global public good, for they yield positive externalities to a vast number of countries, population groups and generations, and have significant non-rival and non-exclusionary attributes.

The proponents of a focus on 'positive' peace as the global public good tell us that, only after justice is achieved, are hunger and poverty ended, and a more rational equilibrium between population and resources is established, may we expect progress on controlling the threats of war. In the narrower definition of peace used here, the order of concern is different. Establishing the minimal conditions for the non-violent resolution and prosecution of violent conflict becomes the first priority.

5.5.3 The international public goods delivery system of operational deadly conflict prevention

The provision of the global public good of 'peace and security' is a highly complex process, involving a multitude of actors and action in several sectors and at several levels (global, national and local). This sections outlines the main elements that comprise the current approach for the delivery of the global public good of 'peace and security' with a focus on operation prevention of deadly conflict (see Figure 5.9).

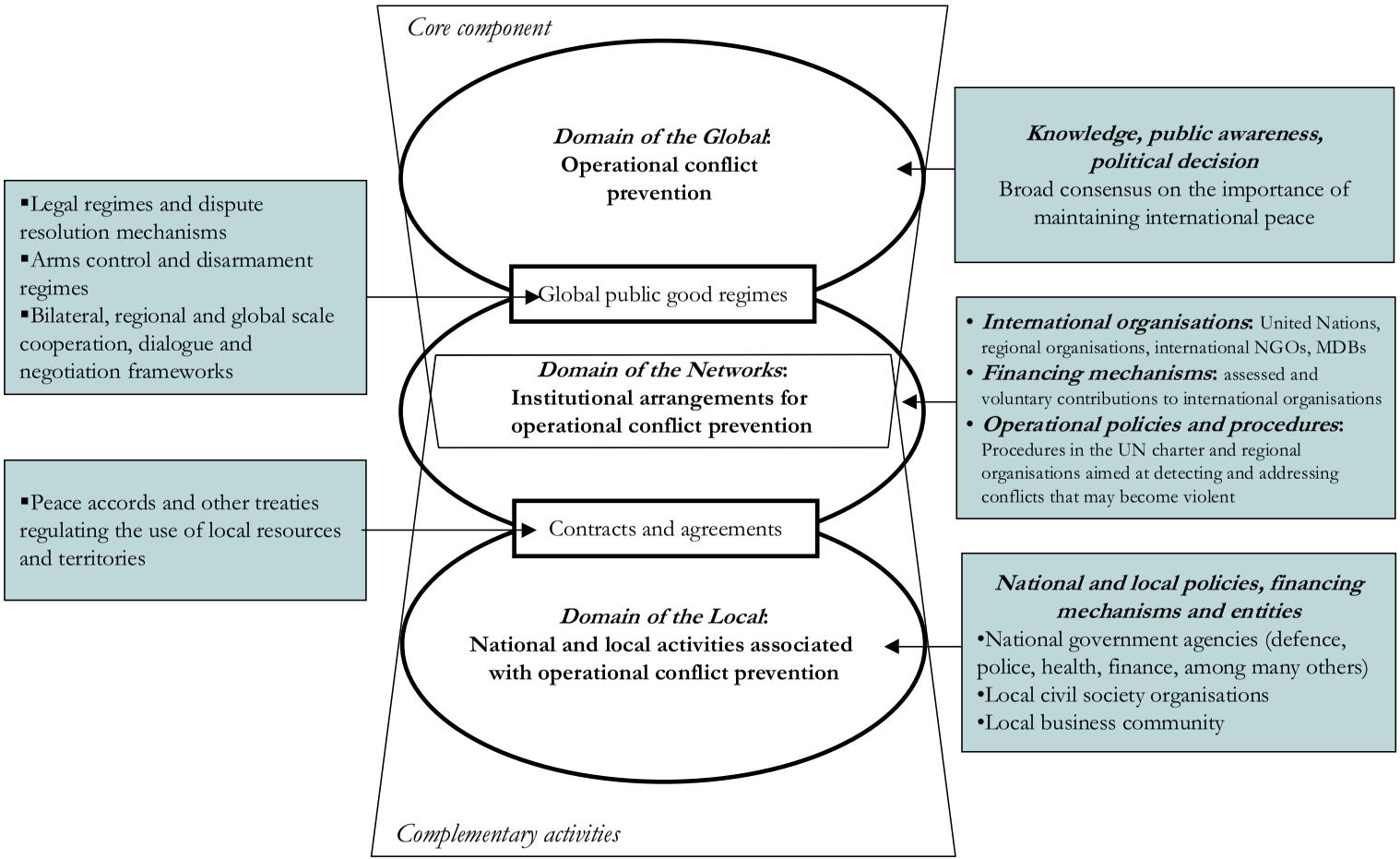
Knowledge, public awareness and political decision

Although a great deal of pessimism currently prevails regarding the efficacy of international involvement in internal conflicts, the post-Cold War era has also seen an unprecedented burst of interest and activity devoted to addressing such conflicts before they become violent. The report by Secretary-General Boutros Ghali, *Agenda for Peace,* received the positive endorsement of the General Assembly in 1992 and prompted the enhancement of measures to monitor humanitarian crises in particular regions. Preventive procedures have been formulated, adopted and employed by various regional organisations. The problems of recent interventions and terrorist attacks are seen by many to be due to a lack of early warning and failure of effective and timely international action.

Epistemic communities have played a crucial role in informing and influencing the conflict prevention agenda. Research on peace and security is based in developed countries' universities and is internationalist in orientation and multidisciplinary in nature. This research seeks to link intra-state conflict to other international issues such as aid, arms regimes, debt, development-assistance, crime and refugees, human rights, globalisation, and regional integration (O'Neill and Tchirgi 2000). On the basis of the increasing understanding of the consequences of not acting preventively, researchers are developing new methodologies and approaches to plan, monitor and evaluate appropriate interventions.

Thus, *knowledge* about the huge costs of indifference towards internal conflicts, and about dangerous and costly interventions into already inflamed situations, is growing. This, together with greater *public awareness* about the effectiveness of a variety of

Figure 5.9 Peace and security: An international public goods delivery system



commonly agreed-upon peaceful methods to preclude violent conflict, has motivated the *political decision* by the international community to improve multilateral action for anticipating and responding to potentially explosive conflicts before they erupt into unmanageable violence.

International regimes

International regimes for preventing deadly conflict are found at the crossing point of the domain of the global end of the networks. They are defined as 'international laws, norms, agreements, and arrangements – global, regional and bilateral – designed to minimise threats to security, promote confidence and trust, and create institutional frameworks for dialogue and cooperation (Evans 1998). They fall into three broad categories: legal regimes and dispute-resolution mechanisms, arms control and disarmament regimes, and dialogue and cooperation arrangements.

Legal regimes and dispute-resolution mechanisms permeate every facet of international relations. They cover virtually every field of interstate activity, including diplomatic relations, maritime affairs, international environmental trade, and communication issues. The most prominent legal regime that governs security issues is the UN Charter, which prohibits aggression between states. It came into force in 1945. Much of the pre-existing system of international law has sought to constrain states from unilateral projections of power into other states, 'internal affairs' or 'domestic jurisdiction'. There is yet no clearly established norm regarding what to do about intrastate conflicts, the most prominent today, although the UN Charter vaguely maintains that there is some ground for international involvement in an internal conflict, if a threat to international peace could be shown.

Arms control and disarmament regimes. Over time, these regimes build confidence as their restraints on arms procurement or military holdings are observed and as on-site verification measures ensure transparency of state behaviour. Finally, *Dialogue and bilateral, regional, and global-scale cooperation arrangements* bring countries together for dialogue and cooperation, thereby providing important foundations for peace.

International organisations

Global public goods regimes in the area of conflict prevention are supported by a range of activities carried out by international organisations and transassociational networks of organisations, as well as combinations of these, which belong to the domain of the networks. The following provides an overview on the roles that different international actors play in providing the global public good.

The United Nations. The United Nations is a unique, comprehensive forum and organisation for collective security and world dialogue. It has a central and irreplaceable role to play in prevention to help governments cope with incipient violence and to organise the help of others. In fact, its principle mission remains 'to save succeeding generations from the scourge of war'. To that end, member states have committed themselves 'to take effective collective measures for the prevention and removal of threats to the peace', as set forth in Article I, paragraph 1, of the Charter of the United Nations.

Regional and sub-regional organisation. In many cases, disputes can and should be

satisfactorily managed and resolved without recourse to the UN, through cooperation at the subregional and regional level. These organisations may be divided into four groups: security organisations (i.e. NATO, OAU, ASEAN, WEU); economic organisations (i.e. EU, APEC, MERCOSUR); political organisations (i.e. OAS), and general dialogue groups of political/cultural associations (i.e. The Commonwealth, La Francophonie, the Nonaligned Movement, the Organisation of Islamic Conference, and the Association of Southeast Asian Nations). These organisations are well situated to maintain a careful watch on circumstances and respond early and discretely when trouble threatens. They play an important role in providing mediation and conciliation services, as they provide a local forum for efforts to decrease tensions and promote and facilitate a comprehensive regional approach to cross-border issues. Nonetheless, regional organisations have a few disadvantages. They may not be strong enough on their own to counter the intentions or actions of a dominant state. They may also not be the appropriate forum through which states engage in or mediate an incipient conflict because of competing goals of their member states or the suspicions of those in conflict.

Multilateral Development Banks (MDBs). Due to their considerable financial resources, technical assets, and global presence, MDBs play an important role in maintaining and recreating an environment in peace and security. They may influence the potential recipient's level of military spending, the quality of its governance (including the transparency of its military budget and degree of military involvement in the civilian economy), its adherence to democratic methods (both in elections and judicial systems) and other international human rights standards, and its cooperation with international and regional security agreements (Stremlau and Sagasti 1998). After all, decisions to provide loans and credits to other nations are inherently political and cannot be separated from the larger policy framework of international relations. In addition, MDBs, in particular those with regional and subregional scope, play a significant role, both in detecting signs of instability of conflict and in engaging borrowing countries in dialogue in potential conflict countries. Nonetheless, at times, the strong position of large regional member states in the Board, might make it difficult for MDBs to engage in an effective post-conflict policy dialogue, especially if the policy issues are controversial and question the current policy pursued by the government of that country.

International Non-governmental Organisations. NGOs have long been engaged in the provision of the global public good of peace and security at least in three ways: they serve as advocates and witnesses of human rights abuses; function as unofficial mediators, and provide early warning. They also initiate and sustain humanitarian and development operations. NGOs have several advantages and disadvantages in working in peace and security issues. On the affirmative side, NGOs have the capacity to engage more quickly and flexibly than governments or international organisations, in part because they are willing and able to bend or circumvent many traditional diplomatic obstacles to such involvement. Their access to local communities often allows them to be much more aware of the early warning signs of trouble. Their reports of a worsening situation can spark more substantial interventions by government and international organisations. On the negative side, NGOs lack accountability and are often most vulnerable to harassment or expulsion if they offend local authorities; they have no diplomatic immunity, and can become targets of warring factions (Stremlau and Sagasti 1998).

Operational policies and procedures

The various tasks carried out by international organisations in the area of conflict are governed by a range of operational policies, decision-making procedures and regulations, which help in the effective application of the principles embodied by the UN and other regional organisations Charters.

Agreements, contracts and other lower level instruments

Placed at the interface between the domain of the networks and the domain of the local, are the formal agreements, bilateral peace accords and other lower level legal instruments, which regulate the relationships between actors in a dispute and establish clearly defined fields of influence in the use of resources and territory. These include the various local peace agreements under international auspices.

National and local organisations

The actions at the national and local levels constitute the 'complementary' activities involved in the provision and financing of the global public good. The most salient actors at the local level in operational conflict prevention are the national governments, the local NGOs or civil society organisations, and the business sector. *National governments* are in a position to open spaces for dialogue and debate in order to forge compromises and agreements between parties and groups in potential clashes. Early action taken nationally, with international assistance as appropriate, to alleviate conditions that could lead to armed conflict, can help to strengthen the sovereignty of states. Less visible, but also active in conflict prevention are many local civil society organisations that conduct unofficial dialogues and democracy-building exercises and other projects at grass-roots and national levels in areas of high tension. The *business community* has a large stake in preventing violent conflict, which inevitably affects their interests. The strength and influence of the business community gives it the opportunity both to act independently and to put pressure on government to seek an early resolution of emergent conflict.

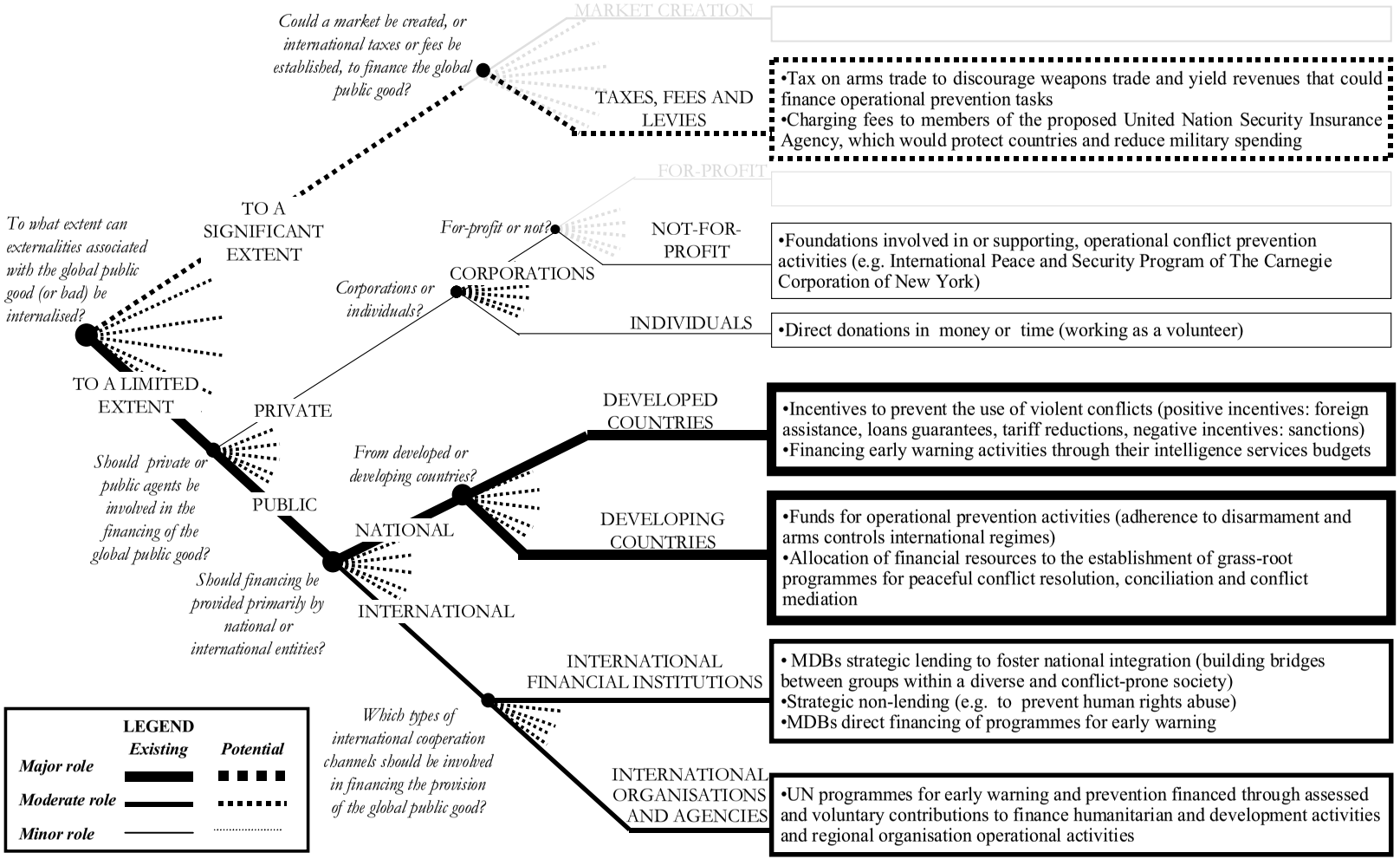
5.5.4 Financing mechanisms for operational prevention

The financing of operational conflict prevention activity relies on contributions from national governments, philanthropy, earnings of the development banks, grants allocated through the United Nations agencies and programmes, etc. Following the classification of financial mechanisms presented earlier (see Figure 5.10), the following explores the financial instruments available and proposed.

Payments by users and beneficiaries associated with internalising externalities

The possibility of levying international taxes to pay for UN operations – including operational conflict prevention activities – has been suggested for quite some time. International taxes would give the organisation 'independence' to operate on a secure and steady independent financial foundation, rather than relying on the daily financial

Figure 5.10 Peace and security: Financing options. Decision tree



will of member states. Several tax proposals have been put forward (Box 3.4). Perhaps the most relevant is a tax on arms trade, which constitutes the most direct way of taxing the global public 'bad'. It would discourage the trade in weapons and simultaneously yield revenues that could be used to provide the public 'good'. The funds raised from arms trading could be specifically earmarked for operational prevention tasks. Although proposals have been made to use the information contained in the Register of Conventional Arms as a base for taxation, the register has been judged as unsuitable for this purpose (Najman and D'Orville 1995).

Another proposal pertains to the establishment of a 'United Nations Security Insurance Agency', which would provide insurance against aggression. This idea would exploit the concept of scale economies: a global UN Peacekeeping Force can protect many countries, helping reduce the need for military spending. The cost of the prepaid insurance would need to be considerably smaller than it costs a country to maintain its own military forces (Henderson and Kay 1995).

Private resources for financing global public goods

Financing from private foundations, non-governmental organisations and individuals, contributes significantly to operational preventive tasks. Various *corporate and private foundations* finance different organisations involved in operational prevention activities. Perhaps the most notable one is the Carnegie Corporation of New York. Its International Peace and Security (IPS) programme, with a current grant budget of US$22 million carries out activities in the areas of non-proliferation of weapons of mass destruction and research on conflict prevention. *Non-governmental organisations* involved in advocacy, humanitarian assistance, mediation and reconciliation and early warning efforts fund programmes of their own in operational prevention activities. *Academic institutions* fund the policy-oriented research that supports the work of practitioners in the field of conflict prevention. *Individuals* also contribute to finance the tasks of operational conflict prevention by direct donations to organisations involved in the field and by donating their time as voluntary envoys to mediate between parties in a dispute, also known as private citizen diplomacy.

Public resources for financing global public goods

Developed countries national sources fund operational conflict prevention tasks in several ways. One of these is through the use of 'positive and negative incentives' to conflict prone countries aimed at dissuading them from the use of violent methods. Incentives may be defined as the inducement process of a sender offering a reward in exchange for particular actions or responses by the recipient (Cortright 1997). Examples of positive incentives would include: foreign assistance, loans guarantees, tariff reductions, direct purchases, subsidies to exports or imports, granting most-favoured-nations status, providing export or import licenses, granting access to advanced technology, offering diplomatic and political support, military cooperation, environment and social cooperation, cultural exchanges, debt relief, lifting negative sanctions, and granting membership in international organisations and security alliances. Negative incentives essentially involve economic sanctions. These seldom appear as state expenditures, but

nonetheless do impose significant costs on private companies, local communities, and national governments. Furthermore, developed countries finance early warning activities through their intelligence services. Developed countries' military forces have been used extensively in traditional peacekeeping roles as 'intervening' forces to ensure the effective implementation of cease-fire agreements and peace treaties.

Developing country national resources finance the provision of peace and security through allocations to its government ministries, particularly its Ministry of Defence. By adhering to particular international regimes such as those that further disarmament and arms control, developing countries reduce their military spending, the size of their military, and implement measures to reduce their stock of conventional weapons. In addition, developing countries allocate financial resources to the establishment of grass-root programmes in conflict resolution, conciliation and conflict mediation. Finally, both developed and developing countries may contribute greatly by reducing light weapons trafficking, which is often destined to insurgent organisations, ethnic militias, warlords and death squads.

Multilateral Development Banks (MDBs) finance certain domestic complementary activities required to ensure the local provision of the global public good of 'peace and security'. MDBs may also undertake strategic investments in regional projects that bear directly on peace and security (i.e. transborder water systems). MDBs also have the option of 'strategic non-lending', e.g. the withholding of financing to protest human rights abuses (Stremlau and Sagasti 1998).

International organisations and agencies. The United Nations (UN) overall 'global watch' includes the wide gamut of tasks involved in operational conflict prevention. Yet, despite the UN's crucial role in conflict prevention, it faces the most severe financial constraints. The UN's regular budget includes the expenses of its main decision making bodies, the administration and management, and is financed through assessed contributions corresponding to the relative income of member countries. The chronic shortfalls of contributions due to late payments have caused such severe recurrent cash flow problems for the regular budget, that the UN has been obliged at times to borrow funds from its peacekeeping accounts (Ford Foundation 1993). For peacekeeping missions, the UN assesses member states separately for each individual peacekeeping operation. Once received, the cash is deposited into a separate account, outside the regular budget. These financial procedures are exceedingly slow due to the delays of reaching agreement on budgets at the outset of peacekeeping operations, and thus not appropriate for the emergency nature of preventive deployment and peacekeeping operations. Some proposals have been put forward to remedy the precarious situation of peacekeeping finances, including unifying the UN's peacekeeping budget into a revolving fund financed by annual assessments. Finally, humanitarian and development activities are financed largely by voluntary contributions. Large donors set their priorities by making voluntary contributions to programmes they favour, creating difficulties for the UN to set priorities and to control its agenda.

In addition, *regional and subregional organisations* contribute to the financing of operational conflict prevention activities in the areas of early warning, preventive deployment (in the case of security organisations such as NATO), conflict mediation and preventive diplomacy. Security, political and economic organisations' budget are financed primarily from assessed contributions of member countries.

5.5.5 Final remarks

The current approach to operational prevention of deadly conflict is still fragmented and patchy. The challenge now is to link international and national actors in a coordinated global public good delivery system. This entails establishing more regularised and widely established arrangements between actors so that resources necessary for early warning and preventive diplomacy could be pooled and tasks assigned in some more deliberate fashion.

In this regard, Lund (1996: 181) has suggested the move to what he calls a 'stratified multilateral prevention regime', which would 'capitalise on the comparative strengths of various global and regional actors already active in the field, coordinating their activities as much as possible within an optimal division of labour that takes advantage of economies of scale.' The functioning of an effective delivery system for conflict prevention, he argues, requires a vertical and horizontal division of tasks. The vertical dimension of activity is important because responsibility for conflict prevention needs to be located as close to an impending conflict as possible, with the level of resources and actors brought into play matched to the severity and scale of hostilities. This means that many operations of the United Nations and other global organisations need to be decentralised to the country-level in order to achieve a vertical division of labour. Thus, action to prevent conflicts would be undertaken first by direct involvement of local actors outside the arena of conflict, acting through their international organisations' representatives present at the local level. If greater resources and pressure seem necessary in order to bring the parties to an agreement, then higher level actors would become directly involved. Each of the three levels, local, regional, and global, would come into the foreground as necessary.

The division of labour necessary to institute a multilateral system of conflict prevention must operate through a horizontal division of tasks, as well as vertical. This means that at each of the vertical levels – local, regional, and global – third parties involved must engage in greater lateral cooperation, coordinating their actions, pooling their resources, and assigning responsibilities as required by the circumstances of a given conflict. Finally, at each level of response, the cast of preventive actors should include not only official entities, but also NGOs active in the field of Track II diplomacy, conflict resolution training and democracy building.

5.6 Financial stability as a global public good: Towards a new global financial architecture

5.6.1 Introduction

The growth of capital flows and the integration of financial markets in the last decades of the twentieth century have increased the probability of global financial crises. Financial markets are inherently volatile, and the asset prices function as a measure of risk. Market agents have developed financial instruments to capture benefits, or to shield against volatility. When financial markets experiment instability, it leads to higher interest rates and risk premiums, and movements of capital flows or exchange rates, which constitutes the outcome of agents' uncertainty about the expected returns of investing in financial markets. At 'normal' levels of volatility, the price system reflects this uncertainty.

Nonetheless, when markets are not able to measure risk, and volatility is perceived as high, financial instability ensues, which may lead to financial crisis that may spread to other countries and regions.

The last decade of the twentieth century witnessed several financial crises that have generated large economic and political costs signifying a major step backwards for the prospects of the country's development. These externalities have demonstrated the weaknesses of financial markets as a product of market failures, both at the national and international level. It has also revealed the necessity for making greater efforts to avoid them. As Wiplosz has stated, 'financial stability can be seen as an international public good because financial instability is a potential public bad that spreads across countries' (Wiplosz 1999).

5.6.2 Financial stability as a global public good

The occurrence of a crisis cannot be clearly foreseen as economists have not yet fully understood how multiple agents shape their expectations about the market, nor have they determined the exact causes that lead to financial crisis. Nonetheless, there is a growing awareness about the tremendous costs produced by financial crisis to countries in terms of their development and welfare, which are much greater and more recurrent in developing countries (Wiplosz 1999). The global concern about the costs of financial instability and the international efforts to make the financial system less prone to distress has made 'financial stability' continuously treated as a global public good (Camdessus 1999). Financial stability as a global public good is the result of national and international policies, and hence a desirable policy outcome.

The global public good in this case would be the avoidance of financial crisis, as it has significant non-excludability and non-rivalrous characteristics and considerable cross-border spill-overs. It is interesting to make a parallel between monetary stability and financial stability. Monetary stability refers to the stability of the general price level (monetary instability results in inflation). Financial stability, on the other hand, refers to the absence of stresses that have the potential to cause measurable economic harm beyond a strictly limited group of customers and counter parties (Crockett 1997). While monetary stability can be seen essentially as a national matter (that calls for a national central bank authority), it is clear that financial instability and its potential to spread across countries is better viewed both as a national and international matter, where international collective action is desirable.

Box 5.5 distinguishes three stages of financial crisis, identifying the negative externalities present as the possible interventions present in each stage. The pre-crises period, when the prevention and prediction mechanisms have a bearing, the crisis period itself, when the mechanisms for crisis management to avoid cross-border spill-overs come into play, and the post-crisis period, when the main task is to minimise the effects of the crisis, such as the loss in production caused by recession, the cost of restructuring the banking systems, and welfare losses.

Although these three stages involve national efforts, a country-focused approach is inadequate for addressing systemic risk due to the presence of negative spill-overs effects. The main reason for collective action in the case of financial instability is prudential: a crisis can quickly spoil the fruits of past economic growth in emerging markets and

Box 5.5 Stages of a financial crisis

Pre-crisis (Crisis prevention, prediction and early warning)

The pre-crisis period contains the actions for preventing, predicting and informing the occurrence of a financial crisis. There is a growing consensus on the steps that need to be taken to minimise the incidence of crises. One typical source of financial instability has been the failures in macroeconomic policies, especially related to exchange rate problems or the inadequate control of short-term borrowing. Moreover, the challenge is to ensure the adequate management of the multiple risks related to financial markets, especially in banking activities (credit, liquidity, market and operational risks), associated with better regulation and supervision of financial institutions. To achieve these goals, the emphasis has been put in the global acceptance and adherence to international standards on financial practices and the measures conducive to strengthen the national financial system.

Financial distress is also associated with problems of information, a source of market failure. Better information on the economic and financial affairs of governments, banks, and corporations will strengthen market discipline and help policy-makers to identify the need for corrective action. But information is never enough. Despite highly developed information and supervision procedures in OECD countries, financial crises and bank runs have occurred recently in Norway, Sweden and the United Kingdom. Likewise, the spread of information may provoke a crisis.

The upgrading of supervision and regulation capacities in financial markets and particularly in banks will strengthen the weak link in the financial chain, improving the mechanisms of early warning and crisis prediction capacities. In order to avoid moral hazard problems, it is necessary to develop clear mechanisms to implement 'rescue packages' and injection of liquidity to prevent, e.g. debt default or unnecessary risk taking behaviour.

Crisis management

The key challenge during the occurrence of a crisis is to avoid cross-border spill-overs, and to minimise the contagion effect to other countries. The main instruments are 'rescue packages' and mechanisms to inject liquidity in a country. For example, the debate about the ways to cut down the size of rescue packages reveals the rivalry and excludability of the resources assigned to this function. The IMF's normal lending limit is 100 to 300% of the country's quota. During the last decade of the twentieth century, rescue packages were 500 to 700% of the quota, although in South Korea it reached 1,900% of the quota. The question is, if resources will be enough in the case of a crisis that has bigger proportions, or in the case of a country 'too big to fall'. This reveals the disproportionate amount of global financial resources assigned to bailing out countries in spite of their irresponsible financial and macroeconomics.

Post-crisis

The consequences of a crisis could be tremendous, especially if countries and regions enter into a recession, which may lead to political and social instability. Foreign aid resources must be mobilised to developing countries that are affected. In the same way, resources must be allocated to the strengthening of the financial system, in order to guarantee their intermediary role.

Sources: Wiplosz (1999); World Bank (2000a); Background papers of the 2020 Global Architecture Conference, '2020 Vision Papers'.

(indirectly) in commodity-exporting, least-developed economies (Ferroni 1999a). Of these three stages, only actions taken during the pre-crisis have the characteristics of non-excludability and non-rivalry. For example, measures such as: the agreement on financial codes and standards, the sharing of information on financial flows and on the situation of financial institutions (which include the flow of information for early warning), and the mechanisms for the use of the facility funds to assist countries in financial distress, have global public attributes. This is not the case for the other two stages. During crisis management, the main mechanism is the use of financial rescue packages, which are region or country specific and are, to a larger extent, excludable and rivalrous. Similar is the case of post-crisis period, consisting mostly of development interventions and involve the use of resources also excludable and rivalrous (like financial aid, rescue of banking system.). Hence, when we speak of financial stability as a global public good, our focus is on the avoidance of financial crisis.

5.6.3 Financial stability delivery system

The conceptual framework made a clear distinction between an 'international public goods delivery system' and a 'global public good', and situates them in a common framework, using an idealised construction (an idealised international public goods delivery system.) Financial stability is a global public good, because of the public *awareness* and the *political decision* to achieve a policy outcome in that field, and hence, is a global policy outcome located in the domain of the global. Institutions, political bodies, financing mechanisms, regulations have been created to compose a 'delivery system' (Figure 5.11). The occurrence of financial crises has led to public concern for creating mechanisms to protect the world of its negative effects.

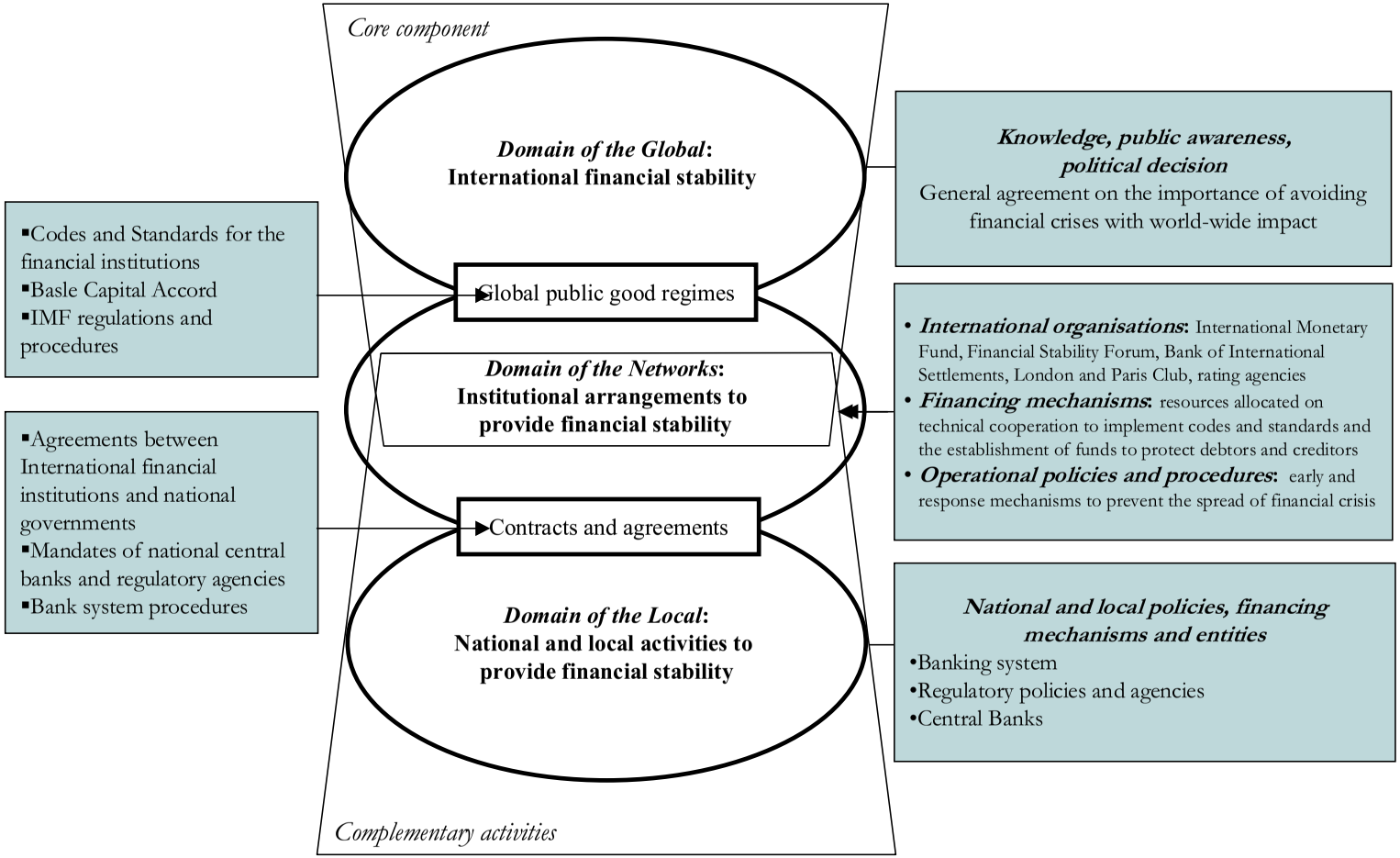
Financial stability regimes

Financial stability regimes comprise the conventions, treaties and protocols that formalise agreements for the provision of a global public good, and reflect the power relations among the actors, that in the case of financial stability have a strong developed country's bias, as their institutions are mainly conformed by the G-7 or G-10 states (or they maintain large voting power in the decision of the institutions)

There is no unique regime for this global public good, as in the case of the Convention on Biological Diversity (CBD) for biodiversity. The main reason is that there is as yet, no global authority with the objective of guaranteeing financial stability. The conceivable institution with regulatory and supervision capacity on financial matters could be a global central bank (Streeten 1992), whose only regional version known is the European Central Bank (ECB). Albeit the role of the ECB is mainly related to monetary matters and administration of the Euro area, its mandate allows ECB to regulate interest rates, affecting portfolio and financial decisions.

It is possible to distinguish three different types of regimes: Intergovernmental regimes; those regimes related to monetary authorities and supervisory institutions, and private regimes. The main intergovernmental regimes are those related to the Bretton Wood multilateral institutions, namely the IMF and the MDBs, which are mandated to offer technical knowledge and financial support in the form of capital flows, or injection of

Figure 5.11 Financial stability: An international public goods delivery system



liquidity from their own resources or from indirect sources as official bilateral aid or private funds tied to adherence to IMF programmes. Concretely in the case of the IMF, a special regime allows it to attend financial disruptions using its Facility Fund (e.g. Contingency Credit Lines), but also to create international liquidity through the emission of Special Drawing Rights. Another regime is the one furthered by the Paris Club, an informal group of official creditors that provide technical knowledge about the management of debt to find coordinated and sustainable solutions to the payment difficulties experienced by debtor nations preventing them from debt default and financial distress.

The second type of regime is constituted by the agreements of central banks and regulatory institutions about the provision of global standards to the functioning of financial markets. The main institutions related to these regimes are the Financial Stability Forum (FSF), the Bank of International Settlements (BIS), the Basle Committee of Baking Supervision (BCBS), and the International Organisation of Securities Commissions (IOSCO), etc. The third type of regime is related to private actors, like the London Club, similar to the Paris Club, except its members are commercial banks. The International Accounting Standards Committee (IASC) is also considered in this group. Both types of regimes are mainly related to the agreements on standards and codes and research on financial markets, as well as the provision of technical advice for their members and dissemination of information to the markets. One of the most important proposed regimes is the New Basel Accord for Bank Capital Adequacy, which would be implemented by 2004, which reflects only the vision of developed countries about the financial market.

Institutions and operational procedures

Many of these institutions are working together to develop standardisation and information transparency mechanisms to avoid and minimise the externalities caused by the information market failures. Such standards, it is hoped, will ease the trade-off between sovereignty and global regulation. While the political consensus about the codes and standards to guarantee transparency in the financial markets and minimise information problems find echo in the international global arena, it is possible to envisage the development of a unique regime, incorporating all the contributions of the main global bodies.

The main question is if markets are able to encourage the implementation of standards. Markets are likely to provide the strongest incentives for economies to implement standards. If private market participants attach increasing importance to information about how far a country meets 'best practice' and takes account of this information in their lending and investment decisions, the incentive to implement standards is powerful. The FSF, in collaboration with the international financial institutions (IFIs), such as IMF and the World Bank, standard-setting bodies and other organisations, are working to raise market awareness of international standards.

National and local entities involved in the provision of a global public good

The global public goods idealised delivery system includes global public good complementary activities, which include the contracts, agreements and other lower level

legal instruments, that mediate between the domain of the networks and the domain of the local. The complementary activities for the provision of the global public good in the domain of the local refer to the national institutions responsible for the implementation of mechanisms for the provision of global public goods.

Efforts spearheaded by the International Monetary Fund – and involving the World Bank, the Financial Stability Forum, among others – are designed to encourage industrial and developing countries to upgrade their financial practices and institutions. The focus of these efforts is to upgrade institutional arrangements in such areas as data dissemination; fiscal, monetary, and financial policy transparency; regulation and supervision of banking; regulation of securities and insurance markets; auditing, accounting, bankruptcy, and corporate governance practices. The institutions responsible for these complementary activities are the Central Banks and the Supervisory Bodies (in topics as stock market, insurance markets, among others). These institutions not only provide adequate information about the real situation of markets, but also implement mechanisms to isolate actors whose financial problems could generate potential financial crises (bankruptcy laws, prudential regulation, etc.).

In general, the public sector is responsible for implementing adequate and healthy macroeconomic policies, in order to maintain the equilibrium of the country. In the *domain of the local,* the central actors are the banking system and the stock markets, which are also responsible for maintaining adequate levels of risk and providing timely adequate information to markets. Also in the local level, the rating risk agencies provide early warning of potential distress in the financial system via the analysis of information provided by market agents.

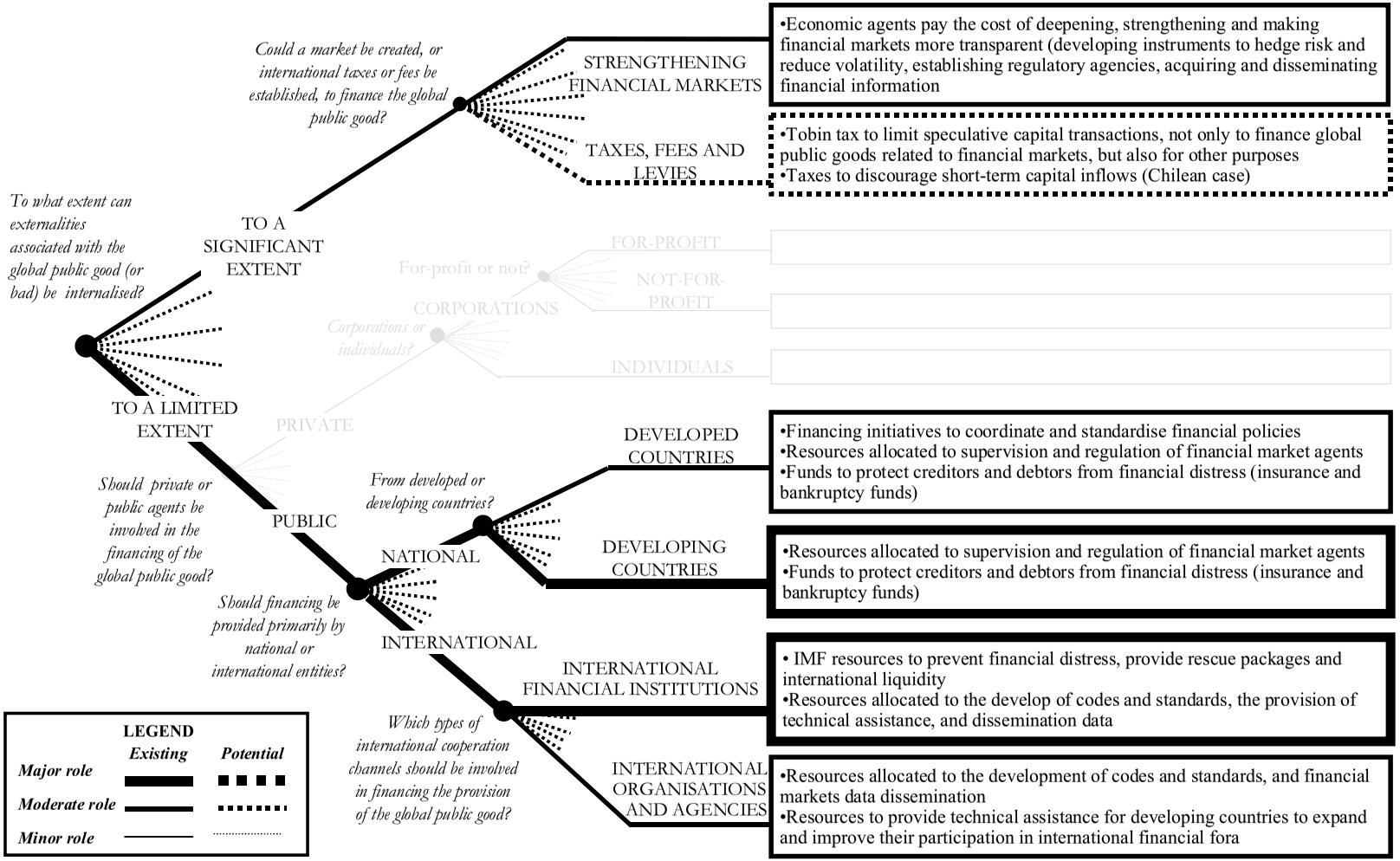
5.6.4 Financing mechanisms for the provision of the global public good

Financial markets are intrinsically volatile, and their negative externalities can impose large losses to the agents in the market. However, the deepening of financial markets (especially in developed countries) has led to the creation of innumerable financial instruments that allow agents to better tolerate their exposure to risks. For example, insurance mechanisms constitute a market mechanism that protects agents from the incidence of financial distress in certain levels. Furthermore, the currency risk that exposes agents to the volatility of exchange rates may be reduced using financial instruments like options or futures. In the same way, other financial instruments and practices like derivates, hedging, portfolio diversification, among others, can function as mechanisms to internalise the potential externalities of financial distress. For some speculative investors, these mechanisms could mean the possibility for obtaining large profits.

Internalising externalities

The framework for exploring financial mechanisms to provide a global public good (financial stability in this case), starts with the question to what extent can the externalities associated with the global public good (or bad) be internalised? (Figure 5.12) The development of financial instruments, related to the deepening of financial markets, means that it is possible to internalise a large amount of the externalities of the public

Figure 5.12 Financial stability: Financing options. Decision tree



bad (financial instability), although they are not sufficient to limit the risk of financial crisis.

Some countries, e.g. Chile, Colombia and Brazil, have decided to protect their financial system from the negative effects of short-term capital inflows. The experience of crises has demonstrated that badly managed banks and open international capital markets are a combustible mix for financial crises. This approach is not always followed by other countries, as taxes on short-term capital inflows alone is not seen to solve emerging markets' financial problems completely. Other policies are necessary to encourage hedging by banks and corporations and to strengthen the domestic financial system. Moreover, some analysts advocate that short-term inflows can improve the consumption possibilities of the population, and the opportunity cost of limiting these inflows could be larger than the supposed benefits.

Another approach for internalising externalities is the use of a Tobin tax, a currency transaction tax (see Box 3.4). The underlying logic was that the tax would slow down speculative, short-term capital flows, as it would tax these flows each time they cross the border, having only marginal effects on long-term flows. Since many other transactions are taxed in some form or another, the absence of taxing on-the-spot transactions in foreign exchange acts as a strong incentive for speculators to operate in this market rather than in others. Thus, although sometimes disputed, the cost of the Tobin tax for longer-term investors would be negligible, and such a tax would not interfere with genuine investment.

Public sources of financing

It is not possible to extract the risky nature of financial markets, nor their externalities. When externalities cannot be fully internalised, public intervention and international collective action must step in. The main international sources for financing the global public good of financial stability can be summarised as follows:

- *The establishment of facility funds to prevent financial crises.* The IMF has a special mandate to avoid the spread of financial crisis through the use of its resources to provide financial assistance. The IMF's capacity to provide financial assistance (that is, its liquidity) amounts to only a portion of the total quota resources of the Special Drawing Rights (SDR), around 212 billion (US$270 billion). The IMF is also able to collect additional resources from bilateral or multilateral sources of financing to complete the financial assistance requirements.[48] Finally, the IMF can obtain resources from their gold reserve sales, and from trust funds, like the Poverty Reduction and Growth Facility (PRGF) and the Initiative for Heavily Indebted Poor Countries (HIPCs) to help reduce external debt burdens.

[48] The International Monetary Fund (IMF) has been empowered to create international money, the SDR, but has done so only twice, in the late 1960s and the late 1970s, and with great reluctance, in the total amount of 21 billion SDRs (about US$28 billion). This financing mechanism could be used to create international liquidity, not only for the provision of financial stability, but for other purposes (see section 3.4.3 of this report).

- *Resources for the provision of technical assistance.* The Financial Sector Assessment Programme (FSAP) aims to promote the soundness of financial systems in member countries. The programme was initially launched for 1 year, in 12 pilot countries, and has been expanded to around 24 countries. Participation in the programme is voluntary. Supported by experts from a range of national agencies and standard-setting bodies, the FSAP seeks to: (1) identify the strengths and vulnerabilities of a country's financial system; (2) determine how key sources of risk are being managed; (3) to ascertain the sector's developmental and technical assistance needs; and (4) help prioritise policy responses.
- *Resources assigned to the development of standards and codes.* Although many international institutions have the task to develop Standards and Codes to improve the transparency and the standardisation of information flows, the Financial Stability Forum is an *ad-hoc* international institution dedicated for this purpose. Its members are national authorities of the G7 countries from the treasury, central bank, and supervisory agency; International Financial Institutions; International Regulatory and Supervisory Groupings; Committees of Central Bank Experts. This variety of actors has permitted the condensation of their proposals on Standards and Codes and their consolidation. Member organisations finance the Forum from their own resources.
- *The provision of information to market agents (data dissemination)*. The data dissemination activity is financed by the resources of several international organisations. For example, the IMF, the World Bank, and other international institutions assign resources from their administrative budget to analyse, host (in their websites) and disseminate financial information.

The financing mechanisms at the national level come from the national budget and the resources collected from the costs imposed to the supervised institutions (banking, stock markets, insurance markets), and are related to the implementation of the international regimes in a country. Financial markets in developed countries are more consolidated than in developing ones. Developed countries have multiple mechanisms and financing instruments to decrease the agents' risks exposure. In this context, the implementation of Standards and Codes constitutes a measure to strength financial markets and provide better information to share with other financial markets. That is not the case in developing countries, where the capacity of supervisory agencies is not well developed, and the implementation of such policies constitutes a greater effort. Also the mechanisms for data dissemination are limited and not well put into practice, imposing costs to the less informed agents.

An additional problem arises in the case of non-developed markets, instruments or regulation in developing countries, related to the incipient development of the financial markets. This is the case of the lack of long-term instruments to provide adequate levels of hedging, or the lack of regulation in derivates, options and futures. In this case, the costs to achieve a strong financial system notably increase.

Other financial mechanisms for the provision of the global public good constitutes the national funds to protect savings, which is also a mechanism of insurance in the case of large bank runs, or the bankruptcy of a financial institution. Similarly, it is possible to consider the country monetary reserves for the same reasons. In this case, the resources

from central banks to provide liquidity in the case of financial distress, currency or banking volatility, could be considered as an additional protection fund in the national level.

5.6.5 *Towards a new financial architecture to improve the provision of financial stability*

The current proposal for the design of mechanisms required to achieve financial stability (mainly designed for developed countries) has led to the debate for the proposal of a new global and regional financial architecture that incorporates the vision of developing countries. The institutional implications for this proposal are anchored in the fact that most financial crises in recent years have occurred in developing countries (or in emerging economies). However, the emerging regimes still show a participation gap between developed and developing countries, reflecting the power relations within them and their related institutions.

From a developing country perspective, a desirable financial system should accomplish these key functions: (1) appropriate transparency and regulation of international financial loan and capital markets, with the progressive assumption of international Codes and Standards, that could present an adequate measure of country risk; (2) adequate and opportune provision of international official liquidity in distress or crises conditions; (3) accepted mechanisms for standstill and orderly debt work-outs, that allocate fairly, the losses between the different agents after a financial crisis, and (4) increased participation of developing countries in initiatives for the reform of the financial architecture in order to balance the power relations in the established regimes.

The main concern about the implementation of a 'one fits all' regulatory and supervision framework in developing countries is related to the weak development of their financial markets. As noted earlier, the lack or absence of instruments, regulatory capacities and even markets could worsen the access conditions of some countries to international financial markets. For example, there are strong critics against the implementation of the Basel Capital accord for Latin America, predicting that the implementation could lead to a higher volatility in the markets. The main argument is that the proposed Accord (to be implemented in 2004) contains the same limitations to the effectiveness of capital ratios in emerging markets as in the current Accord. It leaves the 8 per cent minimum capital requirement unchanged and responds to the needs of industrial countries with liquid and well-developed capital markets. There would possibly be implementation problems, the quality of domestic supervision being one of the most important (Rojas-Suarez 2001). The application of complicated Codes and Standards in developing countries could lead to the same outcome.

The adequate and timely provision of international official liquidity in countries in financial distress leads to the question on the main beneficiaries or users of Facility Funds and 'rescue packages'. Certainly, countries like Mexico, Argentina, Brazil, Indonesia, Korea, Thailand, among others, have received large amounts of money to prevent them from crises, or to rescue their financial systems. Between 1995 and 2000, almost US$285 billion was used to fund their financial rescue packages (World Bank 2001a). Coincidentally, these countries have received a large percentage of capital inflows due to their capital liberalisation process. However, a country like Honduras, with a less open economy (so less probabilities to be contagious), faced a large banking system bankruptcy

in the year 2000. Although the use of these funds does not correspond to the provision of financial stability as a global public good, the regimes that regulate their use are part of the global public good.

There is a growing necessity in developing countries for the establishment of accepted mechanisms for standstill and orderly debt work-outs. As stated earlier, there is evidence that problems of moral hazard for private lenders are rising (Claessens *et al*. 1995). The central issue is to design mechanisms to punish the risky behaviour and prevent scarce rescue funds used for bailing out bad investors.

One of the central problems of the proposals for the new financial architecture is the lack of participation of developing countries in its design. There are three areas where increasing developing country participation in global financial architecture should be considered (Griffith-Jones 2001). The three areas are: (1) incorporating developing country participation in the Financial Stability Forum, where at present they do not participate even though they are invited to the working groups; (2) increasing participation of developing countries in the BIS (where there has been some, but clearly insufficient increase in participation) and in the Basle Committees (where there is no formal participation, though there has been increased consultation); (3) enhancing participation of developing and transition countries in the IMF Board. This greater developing country participation would not only be clearly beneficial for developing countries themselves, whose voice would be stronger; it would also benefit the international institutions both by enhancing their legitimacy and by obtaining valuable insights from developing countries, and developed countries as they would ensure greater commitment from developing countries to free and open markets.

5.7 Some common features of the case studies and analytical reviews

The preceding sections have shown the complexity and diversity of issues that are considered as global public goods, and also how difficult are attempts to systematise their treatment, to identify the components of their delivery systems and to explore the various options for financing them. Nevertheless, the cases suggest that the conceptual framework advanced in section 3 of this report can be of assistance to organise discussions about the provision and financing of global public good in an orderly manner.

A first observation is that *it is useful to restrict the use of the term 'global public good'* only to those aspects of the common global concern that satisfy to a large extent the three criteria of significant cross-border externalities, non-excludability and non-rivalry. Second, in all cases, *it is possible to identify the various components of an international public goods delivery system*, and also, to a lesser extent, to differentiate the core component from the complementary activities that are essential for its provision. The roles played by knowledge, public awareness and political will in determining what becomes a 'global public good' – be it biodiversity conservation, mitigating climate change, generating knowledge to reduce the incidence of HIV/AIDS, maintaining peace and security, or preserving financial stability – highlight the *political nature* of the decisions involved in the provision and financing of global public goods, and in particular the decisions about what constitutes the *core component* and what the *complementary activities*.

Third, the *appropriate design and operation of regimes* is crucial for the functioning of an international public goods delivery system. The problems faced in the provision of

the global public goods mitigation of climate change and peace and security are related to the great difficulties in establishing equitable and effective regimes, which in turn are a reflection of the diverging interests of key players. They are also related to the slow process of achieving consensus in the relevant epistemic communities, be it on the extent and causes of climate change or on the appropriate ways to resolve violent conflicts. In contrast, the problems associated with providing the global public good biodiversity conservation appear to be related more to institutional arrangements than to the characteristics of regimes and to disagreements among members of its epistemic community.

These questions are closely related to a fourth observation: the importance of *effective participation*, both in terms of involving all relevant countries and related actors in the design and operation of global public good regimes, and in terms of an individual country taking part in as many regimes as possible. The former is a prerequisite for the legitimacy of regimes, which highlights the need to support the participation of developing countries in the negotiations that lead to their establishment. The latter would help to expand options and allow compromises and tradeoffs across global issues, rather than focusing on a single or just a few negotiations with a limited set of potential outcomes.

A fifth observation refers to the variety of financing mechanisms involved in the provision of global public goods, and the way in which these are employed in the case of a specific global public good. In some cases there is the possibility of making beneficiaries and producers of the global public good to pay for its provision and in others the private sector can contribute with significant financial resources, but in all cases *there is a most important and irreplaceable role for the public sector*. There is no way of taking out the 'public' in the financing of 'global *public* goods'. At the same time, public financing can be arranged by using many different mechanisms and by combining them in a variety of ways. As shown by the case studies, the set of possible instruments to finance a particular global public good will depend on its characteristics. There is no 'general' solution to the problem of global public good finance. Theoretical considerations, based on the economic theory of public goods can help to obtain insights about their nature and about institutional considerations, but they are less likely to be useful in determining how best to mobilise financial resources to ensure the provision of a global public good.

6 Concluding remarks and suggestions

As this report has shown, in the space of just a few years, discussions and debates on the financing of global public goods have virtually exploded into international prominence. This has resulted in an unusually large number of intellectual and policy-oriented contributions whose shared purpose has been to advance thought and action on common concerns that affect a large portion of humanity. It has also generated considerable controversy and has been characterised by high levels of confusion. This, as explained in the report, comes as no surprise, given the convergence of three major and complex sets of factors in today's discussions on global public goods.

The first of these convergent factors – the concept of public goods itself – has been the subject of continuous debate. It originates in the academic discipline of economics, where it was accorded an exacting technical definition; extending this concept to the global level and stretching it beyond its narrow economic scope involves considerable difficulties. The second factor is globalisation, a paradoxical phenomenon of numerous definitions and few tight conceptual boundaries. The third factor is the system of international development co-operation that finds itself under greater stress today than at any time since its launch over 50 years ago.

Each of these factors has its own share of conceptual imprecision and ambiguity, contradictory trends and competing demands, and each is in a stage of rapid evolution. Their convergence makes attempts at developing integrative conceptual frameworks a problematic and risky proposition. The difficulty is further compounded by the fact that major new initiatives and developments that bear directly on the conception of global public goods and their financing have been emerging at a rapid pace. These risks and problems, however, underscore the need for conceptual clarity. Viewed positively, the potential payoffs, particularly in terms of better and more effective policies to address common concerns, are likely to be substantial. Viewed negatively, the absence of conceptual precision would lead to misguided policies and involve high opportunity costs.

The conceptual framework proposed in this report is based on the systems approach and has focused on the design of an idealised international public goods delivery system. It has the advantage of bringing together in a single framework, a variety of elements to define what constitutes a global public good, and to identify what is required for its production and consumption. It also points out that there is no way of escaping values, preferences, interests, asymmetrical knowledge and power relations in defining global public goods and in arranging for their provision. Therefore, concerted actions are required to move forward.

The idealised framework makes it possible to begin answering at least some of the preoccupations and reservations that are frequently expressed about global public goods.

- *To what extent is the international public goods approach useful in addressing global common concerns?*

  To quite a significant extent. Indeed, by focusing attention on the limitations of current political, legal, institutional and financial arrangements for addressing global problems, the global public goods approach has already made an important contribution. However, there is a need for pulling together a growing number of disparate conceptual contributions (including, of course, the ideas put forward in

this report), to reach consensus and broad agreement on definitions, and to move from the intellectual to the policy arena. In a sense, this would be similar to what happened with the concept of 'sustainable development' during the last decade. Initially it generated a controversy and debate, but gradually it became more precise, policy-oriented and widely accepted.

- *How should the process of defining global public goods be approached?*

  With restraint, circumspection, rigour and patience. Current practice has led to grouping all types of global concerns, aspirations or desirable situations under the title of 'global public goods'. Without defining a global public good with precision – a task that involves complex negotiation and interactions of political and technical nature among many stakeholders – this could soon to render this term meaningless. Also, the more focused the definition, the greater the possibility of deriving useful policy implications and of mobilising financial resources. This requires adopting rather stringent conditions regarding the reach of cross-border spill-overs or externalities, and the degrees of non-excludability and non-rivalry. The elements of an 'idealised international public goods delivery system', together with the distinction between the core component and the complementary activities, can be of help in this task.

- *How should choices be made on which international and global public goods to provide?*

  By emphasising the political nature of these choices. The determination of what are international public goods and which ones have priority for provision involves a multiplicity of actors with different interests and agendas. The international community of nations, corporations and civil society associations faces difficult choices in setting priorities, allocating all types of scarce resources (political capital, attention of key decision-makers, institutional and organisational capabilities, finance), and in mobilising support for such choices. These choices must be informed by global equity considerations, by international solidarity and by the need to eradicate world poverty, or, at least, to meet the internationally agreed target of halving poverty by 2015.

  The lack of public spaces specifically devoted to the discussion, negotiation and agreement on such matters can be seen as a major shortcoming of the current international system. A possible response to this might be the establishment of a task force or working group to address the issue of global public goods, preferably of a temporary nature and within the UN system but with a mandate to hold consultations with international private sector and civil society representatives. Its function would be to debate these issues systematically and to give recommendations on priorities and on the structure of international public goods delivery systems. It would, of course, be no easy task to reach consensus on whether halting the spread of HIV/AIDS is more, or less important, than conserving biodiversity, or on whether maintaining peace and security should take precedence over abating climate change. Such choices, however, are currently being made –albeit implicitly – without much discussion and without attention to the asymmetries that are inherent in international power relations. The establishment of a task force or working group may be seen as a first step to redress this situation, and could be one of the recommendations of the International Conference on Financing for Development, scheduled for early 2002 in Mexico.

- *How can the widest possible participation be ensured in the design and implementation of international public goods delivery systems?*

  It cannot, unless better institutional arrangements are put in place. The varying extents to which countries – as well as firms, associations and individuals – benefit from and contribute to the production of an international public good lead them to assign different priorities to externalities, spill-overs, degrees of excludability and other characteristics of international public goods. Identifying and responding to such diversity of demands requires highly inclusive institutional arrangements, capable of processing a multiplicity of viewpoints and of ensuring the participation of all relevant stakeholders, while at the same time avoiding glaring inconsistencies and maintaining overall coherence. In this regard, the perception that arrangements for the provision for some public goods are an imposition of rich donor countries and Northern NGOs reduces their legitimacy, creates ownership problems and conspires against the active involvement of those who actually produce the international public good. Therefore, discussions and negotiations regarding the definition, provision and financing of international public goods should involve the participation and cooperation of as many of the affected stakeholders and constituencies as possible.

  This is not happening, and will not happen, in the absence of mechanisms to build and support the capacity of developing country stakeholders – which are usually at a disadvantage – for active and meaningful participation in the design and operation of global public goods regimes. Such mechanisms could take the form of a general 'participation fund' along the lines proposed by the UNDP, or of specific participation financing tied to an individual global public good. They would allow reaching out to researchers, academics, intellectuals and informed representatives of civil society in developing countries, whose participation in decisions affecting the provision of global public goods could also be considered, in itself, as an international public good.

- *How can global, regional, national and local interests be aligned so as to ensure that effective actions are taken to ensure the supply of an international or global public good?*

  By creating appropriate incentive systems and financing mechanisms. A great variety of state, private and civil society actors must be involved in the functioning of an international public goods delivery system, all the way from raising awareness about its importance at the global level down to the specific activities that actually produce or consume it. In particular, it is important to reach agreement on what constitute the core component and the complementary activities in the delivery system. The international community bears the main responsibility for undertaking and financing the activities that are in the core component, while national and local organisations have a similar obligation with regard to the complementary ones. Both sets of activities should be closely coordinated and harmonised to create an effective and efficient international public goods delivery system. This implies, among other things, agreeing on a division of labour between the various international institutions, government agencies, private sector entities and civil society organisations that participate in the delivery system.

  The regimes that are part of the delivery system should establish rules, regulations, incentives, financing mechanisms and procedures to influence their behaviour and motivate their active involvement in the provision of the public good. Yet, it may not

be enough to focus on the explicit policies directly associated with an international public good delivery system; other international, national or local policies can thwart its purpose and contain, in effect, an array of 'implicit' public goods policies that neutralise efforts to provide it. For example, energy pricing policies may stimulate the consumption of fossil fuels and undermine emissions reduction programmes; agricultural and forestry policies may override biodiversity conservation efforts, and industrial property regulations may constrain the ability to halt the spread of HIV/AIDS. In addition, well-designed and properly aligned incentive systems could help in avoiding free-riding and the underprovision of international public goods.

Aligning the activities of the variety of public, private and civil society agents that intervene in an international public goods delivery system demands is a complex task that requires substantive policy analysis and administrative capabilities. These are not always found in international organisations and may be available only to a limited extent in the national and local governments, private sector and civil society institutions of developing countries. Therefore, it is essential to strengthen their capacity to contribute to the design and operation of an effective international public goods delivery system. At the international level it is important to reinforce UN bodies and other regional organisations, and to avoid an excessive reliance on the multilateral development banks. As indicated in the preceding sections, the multilateral development banks should have an important, but not primary role in the provision of global public goods, for they must balance this role with their central functions of financial intermediation and national capacity building aimed at reducing poverty and improving living standards. At the same time, multilateral development banks should include international and global public goods concepts and practices in their operations, and particularly in their policy dialogues with borrowers and grantees.

- *How best to approach financing issues in an international public goods delivery system?*

  There is no single 'optimal' approach to the financing of global public goods. While some general principles and questions are useful in the examination of financial issues and alternatives (e.g. to what extent can the externalities be internalised? Could a market be created? Could international fees or taxes be levied? How far down along the continuum from global to local should a global public good stretch?), a singular set of appropriate financial arrangements will apply for each specific international public good. This implies adopting a systematic case-by-case approach to the identification and choice of financing mechanisms. Nevertheless, a few guidelines can be inferred from the conceptual framework, the case studies and the review of the literature in this report.

  First, even in cases where externalities can be internalised and market-based instruments established to provide incentives for private agents to engage in the production of an international public good, public intervention, including public financing, will be required. This is because the proper operation of a public goods delivery system requires transparency, openness, accountability and an effective regulatory framework. These good governance features require public financing. Thus, a certain amount of public financing will be required for market mechanisms to deliver international public goods.

  Second, public funding is and will remain by far the main source of financing for

international public goods. The scope for private sources, including both for-profit and not- for-profit corporations and individuals, is important and growing, but the amounts generated are likely to remain quite modest in comparison to public funding. Moreover, there is a much higher degree of uncertainty with regard to predictability and sustainability of funding from private sources. There is, in the end, no substitute for public funding of international public goods.

Third, to the extent that the numerous proposals and calls for the provision of international public goods become operational (i.e. delivery systems are put in place), more stable and predictable sources of public funding for such goods will be essential. Existing arrangements, based on limited assessed and substantive voluntary contributions to the United Nations and other international organisations are weak and unreliable. They will not provide the security that is essential for an expanded provision of international public goods. Even legally binding periodic replenishments have often been ineffective, as donors sometimes do not honour their commitments. Thus if the international system evolves to the provision of global public goods on a widespread basis, international taxation, fees and levies become essential, indeed inevitable.

- *Will a global public goods approach lead to additional resources for development cooperation?*

  It is possible, but not likely in the short term. While it has been claimed that a global public goods approach could 'rescue aid' and increase resources for development assistance, there are equally compelling arguments that it may divert scarce aid resources. The messy subject of 'additionality', with its many conceptual, statistical and political ramifications, comes to the fore when examining such claims and counterclaims. For additional financing to be raised through the use of a global public goods approach it would be first necessary to clearly define these goods, to identify the delivery systems and specify the funds it requires. It would then be necessary to ensure that resources allocated for this purpose do not reduce the amount of aid, and also that such allocations do not affect negatively the prospects for future increases in development assistance.

  In order to do this, it is essential to separate clearly those resources allocated to development assistance in general, which would benefit primarily the recipient countries, from those used in the provision of global public goods, which benefit developed countries at least as much as developing countries. The financing of international and global public goods should not come at the expense of development assistance flows, and particularly those directed to the poorest developing countries. This has important implications for development assistance reporting procedures and statistical data gathering activities.

- *How can uncertainty, time lags and the dynamic character of international public goods be dealt with?*

  By being flexible, adaptive and adopting a learning stance. In the relatively short time international and global public goods issues have acquired prominence, and despite the confusion and controversy that have accompanied their eruption onto the international scene, an informal collective learning process appears to be under way. Even as the concept of public goods has become a moving target, intellectual

contributions are now building on one another and academic and policy-oriented debates are focusing on the most relevant of these. However, if the concept of international and public goods is to realise its potential, it will be necessary to put into practice a broader and more operational collective learning process.

This would involve treating initiatives to provide international and global public goods as experiments from which to learn. Temporary and highly focused institutional arrangements involving multiple stakeholders may be a way to proceed forward without undue rigidities and without committing excessive amounts of resources. Such arrangements would have to be monitored and evaluated continuously, with the aim of spreading best practice (this could be a task for a possible UN 'international and global public goods' body at the UN). Without too much exaggeration, enhancing the learning capacity of the international community to improve the provision of international and global public goods may be itself considered as a public good.

In the last analysis, transforming a most promising approach – international and global public goods – into an effective instrument for dealing with common global concerns will require, beyond instituting a collective learning process, very strong leadership along with forward-looking countries, institutions and persons committed to the goal of global equity and sharing the responsibility of realising such potential.

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Annexes

Annex A

Summary of definitions and concepts

Most of these definitions are drawn from: I. Kaul, I. Grunberg and M.A. Stern, 1999, *Global Public Goods: International Co-operation in the 21st Century*, New York: Oxford University Press; and R. Kanbur and T. Sandler, 1999, 'The future of development assistance: common pools and international public goods', *Policy Essay* No. 25, Washington DC: Overseas Development Council.

Term	Definition
Aggregation technology approach	Approach to public goods that focuses on the relationship between individual contributions and the overall level of the public good. Four different aggregation technologies are important to the discussion on international development cooperation: summation, best-shot, weakest link and weighted sum. (R. Kanbur and T. Sandler, 1999, 'the future of development assistance: common pools and international public goods', *Policy Essay* No. 25, Washington, DC: Overseas Development Council.)
Best-shot aggregation technology	According to the 'aggregation technology' approach, in the best-shot technology, the overall level of the public good is determined by the contribution made by the actor leaving the largest contribution. Research efforts to find a cure for malaria is an example as 'whoever is first over the line wins for everyone'. In contrast to summation technologies, the contribution of each actor does not serve as a perfect substitute for that of another. On the contrary, the contribution of an actor who is not the best-shooter will have no effect on the aggregate level of the particular public good, even though these efforts may lead to other, unexpected findings and benefits. The actor who has the best chance of providing a particular public good should do so. Since the chances of success typically are positively correlated with the resources available, the best shooter is often one of the rich nations. With this aggregation technology, it is therefore counterproductive to transfer resources to less developed nations. Instead, the solution should be sought in the richer countries, the good should then be disseminated to poorer countries. (R. Kanbur and T. Sandler, 1999, 'the future of development assistance: common pools and international public goods', *Policy Essay* No. 25, Washington DC: Overseas Development Council, p. 70).
Club goods	An intermediate case between a pure public good and a pure private good. A public good with non-rivalry consumption but for which, because of an institutional arrangement, consumption is restricted to members. Members of a club may charge a toll or a user fee to exclude consumers not willing or able to pay. 'A club represents a clever institutional arrangement for getting users to indicate how much value they place on the good and to be charged accordingly'. A transnational road for which a toll is extracted is an example of a regional club good. The composition of a vaccine limited in use due to intellectual property rights is another example of a regional club good. As the collective of contributors to the good equates with the collective of consumers, club goods imply less free-riding than other forms of public goods. (I. Kaul, I. Grunberg and M.A. Stern, 1999, *Global Public Goods: International Co-operation in the 21st Century*, New York: Oxford University Press, p. 62).

Coase's theorem	When the parties affected by externalities can negotiate costlessly with one another, an efficient outcome results, no matter how the law assigns property rights and thus responsibility for damages with respect to the parties involved. (R. Frank, 2000: *Microeconomics and Behavior*, New York: McGraw-Hill)
Common pool resources	Goods for which exclusion is difficult to uphold and consumption rivalry exists. Ostrom states that CPRs are natural or man-made resources 'sufficiently large that it is costly to exclude others from obtaining subtractable resources-units'. Two criteria are used to define a CPR: (1) the cost of achieving physical exclusion from the resource; and (2) the presence of subtractable resource-units (Gardner, Ostrom and Walker 1990).
Externality	A phenomenon that arises when the effects of an action are not born by the actors directly involved but by someone else. Consequently, externalities are sometimes called third party effects. They can be both positive and negative. If the production of a private good causes a firm to release pollution into the nearby river, this producer is causing a *negative externality*. A *positive externality* is produced if the water is purified, as everybody downstream can then enjoy this benefit. If the cost associated with a negative externality is effectively attributed to the agent behind the externality, the externality has been 'internalised'. Positive externalities can be internalised when the values added by an actor's initiatives are confined under the control of that same actor. (R.H. Coase, 1937 'The Nature of the Firm', *Economica N.S.* Vol 4, pp. 386–405; I. Kaul, I. Grunberg and M.A. Stern, 1999, *Global Public Goods: International Co-operation in the 21st Century*, New York: Oxford University Press, p. 509).
	An externality occurs when the welfare of an agent depends directly not only on what that agent does but also on what others do or fail to do. (M. Ferroni, 1999, 'Reforming foreign aid: the role of international public goods'*, OED Working Paper Series*, No. 4, Washington DC: World Bank, p. 6).
Final global public goods	Final global public goods are outcomes rather than 'goods' in the standard sense. They may be tangible (such as the environment, or the common heritage of mankind) or intangible (such as peace or financial stability). (I. Kaul, I. Grunberg and M.A. Stern, 1999, *Global Public Goods: International Co-operation in the 21st Century*, New York: Oxford University Press, p. 3).
Free-riding	This occurs if a person takes part in the benefits of a (public) good without paying for it or alternatively, abstaining in the provision of a good in the hope that others will contribute. Because it is difficult to preclude anyone from using a pure public good, those benefits from the good have an incentive to avoid paying for it, that is, to be free riders. (I. Kaul, I. Grunberg and M.A. Stern, 1999, *Global Public Goods: International Co-operation in the 21st Century*, New York: Oxford University Press, p. 509).

Global public good	A public good with benefits that are strongly universal in terms of countries (covering more than one group of countries), people (accruing to several, preferably all, population groups) and generations (extending to both current and future generations, or at least meeting the needs of current generation without foreclosing development options for future generations). (I. Kaul, I. Grunberg and M.A. Stern, 1999, *Global Public Goods: International Co-operation in the 21st Century*, New York: Oxford University Press, p. 509).
	Global public goods are commodities, resources, services and also systems of rules or policy regimes with substantial cross-border externalities – that are important for development and poverty – reduction, and that can be produced in sufficient supply only through cooperation and collective action by developed and developing countries. (This approach involves the idea of both cross-national benefits, and of cross-national collective action to achieve them.) In practical terms, the determination that the development community should work cooperatively to produce a desired global public good also involves consideration of how action should be implemented and how collective financing can be employed to ensure the public good is not undersupplied. (World Bank, 2000g, 'Poverty reduction and global public goods: Issues for the World Bank in supporting collective global action', Paper presented to the Development Committee (Joint Ministerial Committee of the Boards of Governors of the Bank and the Fund on the Transfer of Real Resources to Developing Countries), Washington, DC, Document No. DC/2000-16, 6 September, p. 2.)
Intergenerational pure public good (bad)	Provides benefits (costs) that are non-rival and non-excludable within and among generations. For example, a genetically engineered medicine that cures cancer can benefit people world-wide during the discovering generation's lifetime and for the generation to come. Similarly, lost diversity can have adverse global consequences for today's generation and all subsequent generations. (T. Sandler, 'Intergenerational public goods: strategies, efficiency and institutions' in I. Kaul, I. Grunberg and M.A. Stern, 1999, *Global Public Goods: International Co-operation in the 21st Century*, New York: Oxford University Press, 1999, p. 20).
Intermediate global public goods	Intermediate global public goods, such as international regimes, contribute towards the provision of final global public goods. Note that global public goods, such as economic growth arise from a mixture of public and private inputs. (I. Kaul, I. Grunberg and M.A. Stern, 1999, *Global Public Goods: International Co-operation in the 21st Century*, New York: Oxford University Press, p. 3).
Joint products	A public good is a joint product when one specific activity yields two or more outputs, i.e. the provision of a specific good has external effects in the form of indirect outputs. The outputs labelled as a joint product are more distant from the initial good than are direct external effects from the initial good. Kanbur *et al*. (1999) make the distinction between joint products that are 'ally-wide' and those that are 'ally-specific'. A regional security alliance will give security to its members which Kanbur *et al*. (1999) call an alliance-wide effect. If an enemy is kept from attacking, all members of the alliance stand to gain from the deterrence caused of the alliance. The alliance's military equipment and manpower can also be used to meet other goals such as coastal protection and disaster relief for one specific ally. Consequently, ally-specific products are jointly derived from the security alliance.

	(I. Kaul, I. Grunberg and M.A. Stern, 1999, *Global Public Goods: International Co-operation in the 21st Century*, New York: Oxford University Press, p. 63; R. Kanbur and T. Sandler, 1999, 'The future of development assistance: common pools and international public goods', *Policy Essay No. 25*, Washington, DC: Overseas Development Council, p. 63)
Market failure	The situation in which a market fails to attain economic efficiency. That is, market imperfections/failure exist when there is a substantial difference between the selling and buying prices for factors, goods or services. (I. Kaul, I. Grunberg and M.A. Stern, 1999, *Global Public Goods: International Co-operation in the 21st Century*, New York: Oxford University Press, p. 510).
Mixed public good	A mixed good lies between the polar extremes of a private good and a public good, containing elements of both. For example, inoculation against disease is a mixed good, since its benefits the community at large (by reducing risks of illness) as well as the individual. In such a case, private consumption confers a beneficial externality on the rest of the community. (I. Kaul, I. Grunberg and M.A. Stern, 1999, *Global Public Goods: International Co-operation in the 21st Century*, New York: Oxford University Press, *p. 510*).
Moral hazard	The tendency for those who purchase insurance to be less cautious, as they have a reduced incentive to avoid what they are insured against. (I. Kaul, I. Grunberg and M.A. Stern, 1999, *Global Public Goods: International Co-operation in the 21st Century*, New York: Oxford University Press, *p. 510*).
Non-rivalry criteria	The defining criteria of non-rivalry stipulates that the cost of increased consumption of the good is zero. In other words, consumption by one actor does not reduce the supply available to another. It does not cost anything when, in addition, other persons consume the good consumption. (P. Stalgren, 2000, *Regional Public Goods and the Future of International Development Co-operation. A review of the Literature on Regional Public Goods*. Stockholm: Expert Group on Development Issues, Ministry for Foreign Affairs p. 6)
	A good is non-rival or indivisible when a unit of the good can be consumed by one individual without detracting from the consumption opportunities available to others from the same unit. Sunsets are non-rival or indivisible, when views are unobstructed. (I. Kaul, I. Grunberg and M.A. Stern, 1999, *Global Public Goods: International Co-operation in the 21st Century*, New York: Oxford University Press, p. 510).
Non-excludability criteria	The criteria of non-excludability states that once a public good has been produced its positive and negative externalities are not confined to the actors directly involved in its production. Put differently, individuals not contributing to the payment of the good cannot be excluded from consumption (P. Stalgren, 2000, *Regional Public Goods and the Future of International Development Co-operation. A review of the Literature on Regional Public Goods*. Stockholm: Expert Group on Development Issues, Ministry for Foreign Affairs p. 6)

Pareto efficiency	A resource allocation is said to be Pareto efficient if there is no rearrangement that can make anyone better off without making someone else worse off. (I. Kaul, I. Grunberg and M.A. Stern, 1999, *Global Public Goods: International Co-operation in the 21st Century*, New York: Oxford University Press, p. *510*).
Prisoner's dilemma	A situation in which the independent pursuit of self-interest by two parties makes them worse off. In game theory, the prisoner's dilemma describes a situation in which lack of information impedes collaboration between two prisoners. (Inge Kaul, Isabelle Grunberg and Marc Stern, *Global Public Goods: International Co-operation in the 21st Century*, New York, Oxford University Press, 1999, p. *510*).
Public goods	Public goods are commodities, services or resources with shared benefits. They possess two characteristics: they produce benefits that are impossible to prevent everyone from enjoying (non-excludability), and consumption by one individual does not detract from that of another (non-rivalry). The classic example of a public good is clean air. Once produced, it is impossible to limit the enjoyment of clean air: everyone can breathe it. At the same time, the marginal cost of allowing another person to breathe the clean air is zero. If the benefit of the public good is limited geographically, it is a local or national public good. However, if benefits accrue across all or many countries, it is a global or regional public good. (World Bank, 2000, *Poverty Reduction and Global Public Goods: Issues for the World Bank in Supporting Global Collective Action*, p. *1).*
	A public good is a commodity, service, or resource whose consumption by one user does not reduce its availability to the next – in jargon, public goods are non-rival in consumption. Public goods are also 'non-excludable', that is, if the good is provided, the provider is unable to prevent anyone from consuming it, whether that user pays for the privilege or not. Because of this characteristic, public goods tend to be undersupplied. Users are able to free-ride. This becomes evident if one considers the following classic examples of public goods: clean air, national defence, and street lighting. A close relative of the concept of public good is the notion of externality. The motivation to invest in public goods arises from the desire to bring out positive externalities or to correct, or compensate for, negative ones. Collective (or government) action is necessary to produce public goods, because private solutions often fail. In particular, markets are unable to supply non-excludable goods. (M. Ferroni, 1999, 'Reforming foreign aid: the role of international public goods', *OED Working Paper Series*, No. 4, Washington DC: World Bank, p. 6)
	Public goods have the properties of non-rivalry in consumption and non-excludability. For example, peace costs little or nothing for an extra individual to enjoy. In addition, the costs of preventing any individual from the enjoyment of this good are high. (I. Kaul, I. Grunberg and M.A. Stern, 1999, *Global Public Goods: International Co-operation in the 21st Century*, New York: Oxford University Press, p. 511).

Subsidiarity	Guiding principle for institutional arrangements correcting the undersupply of international public goods: the undersupply should be handled closest to the point where the problem occurs. The subsidiarity principle is an application of fiscal equivalence where the spill-over range and institutional authority are matched as closely as possible among existing jurisdictions. Thus for example, if the public good possesses a well-defined range of benefit spill-overs, then ideally the principle of fiscal equivalence would dictate that the decision-making body's jurisdiction should coincide with the spill-over region. If, for example, a pest affects the crops of only four Latin American countries, then any institution (e.g. a partnership or alliance) that channels resources to fight this pest should include just these four countries. (I. Kaul, I. Grunberg and M.A. Stern, 1999, *Global Public Goods: International Co-operation in the 21st Century*, New York: Oxford University Press; R. Kanbur and T. Sandler, 1999, 'The Future of Development Assistance: Common Pools and International Public Goods', *Policy Essay* No. 25, Washington, DC: Overseas Development Council, pp. 58–83).
Summation aggregation technology	The most common type of technology of public goods, according to the 'aggregation technology' approach. It refers to goods where each unit contributed by an actor adds equally to the overall level available for consumption. Consequently, the contribution of each actor serves as a perfect substitute for that of another. If five nations each emit 1,000 metric tons of toxic gas into the atmosphere, the impact on the global level will be 5,000 metric tons. Similarly, the regional level of success to alleviate desertification is equally dependent on the land-use practices in the neighbouring nations. (R. Kanbur and T. Sandler, 'The Future of Development Assistance: Common Pools and International Public Goods', Policy Essay No. 25, Overseas Development Council, Washington, DC, 1999, p. 70)
Transaction costs	The extra costs (beyond the price of the purchase) of conducting a transaction, whether those costs are in money, time or convenience. (R. Kanbur and T. Sandler, 1999, 'The Future of Development Assistance: Common Pools and International Public Goods', *Policy Essay* No. 25, Washington, DC: Overseas Development Council, p. 511).
Weakest link aggregation technology	Weakest link aggregation technologies are characterised by the fact that the smallest contribution made by an actor sets the effective level available for the entire group, whether the group is a nation, a region, or the globe. Contagious diseases are a popular example, since the effectiveness in containing the plague is determined by the nation making the least contribution. Environmental degradation caused by toxic wastes abides by the same rationale, since the regional public good of clean air and water will only be achieved up to the level of the contribution by the nation making the least cutbacks. (R. Kanbur and T. Sandler, 1999, 'The Future of Development Assistance: Common Pools and International Public Goods', *Policy Essay* No. 25, Washington, DC: Overseas Development Council, p. 71)

Weighted sum aggregation technology	Weighted sum technologies resemble summation technologies except that in the former, weights are applied to the individual contributions before summing them. (In summation technologies, each individual's one-unit contribution of the public good counts equally towards the aggregate). The weighted sum approach to classifying public goods is more flexible as it considers how different factors, such as distance, time, and general wind directions, affect the interdependence created by international public goods. Kanbur *et al*. (1999) state that 'the deposition on country *i* is the weighted sum of the emission of the other countries, where these weights are the share of other countries' emissions deposited on country *i*.' The weight attached to a country's external effect on another country reflects the country's relative position. For example, the radioactive fall-out following the accident in Chernobyl affected countries nearby and in the direction of the wind. (R. Kanbur and T. Sandler, 1999, 'The Future of Development Assistance: Common Pools and International Public Goods', *Policy Essay* No. 25, Washington, DC: Overseas Development Council, pp. 72–4)

Annex B

Typologies of Global Public Goods

Aggregation technology criteria:

The aggregation technology criteria classify public goods by the relationship between individual contributions and the overall level of the public good. This classification system builds on the fact that the manner in which individual contributions to the public good determine the total quantity of the good available for consumption varies among different goods. The four key aggregation technologies highlighted by Kanbur and Sandler (1999) include:

- **Summation**: the most common technology where each unit contributed to the public good adds equally to the overall level of the good. Consequently, the contribution by an actor adds equally to the overall level available for consumption. If five nations each emit 1,000 metric tons of toxic gas into the atmosphere, the impact on the global level will be 5,000 metric tons. The tendency here is for the richer nations to provide the good and for poorer ones to free-ride. Unfortunately, as Stalgren notes, the summation technology implies a pessimistic prognosis for collective action in the absence of an enforcing power, such as a government or treaty with sanctioning rights
- **Best shot**: the overall level of the public good is determined by the contribution made by the actor providing the largest contribution. In contrast to summation technology, the contribution of one actor does not serve as a perfect substitute for that of another. When developing a pest-resistant crop or a cure for malaria, the greatest contribution or effort will determine the overall level of the public good. In this light, the 'best shooter' tends to be rich actors who have the resources to find solutions and then allow the benefits to spill-over to others.
- **Weakest link**: the smallest contribution made by an actor determines the level available to the entire group, whatever the make up of the group may be (nation, region, local community). The country with the least safeguards against containing a disease, will determine the chances, for all at risk, of quarantining and eradicating the disease.
- **Weighted sum**: resembles the summation technology, except that here weights are applied to the individual contributions before summing them. This more flexible technology takes into account factors such as a country's relative geographical location and its size (among other factors depending on the issue at hand, i.e. wind direction in regard to acid rain deposition). The country's share of its contribution motivates it to act, because this share indicates the country's 'ownership' to the consequences of its public good contribution.

Source: R. Kanbur and T. Sandler, 1999, 'The Future of Development Assistance: Common Pools and International Public Goods', *Policy Essay* No. 25, Washington, DC: Overseas Development Council

Non-excludability and non-rivalry criteria:

The criteria based in the degrees of non-excludability and non-rivalry of a public good. The good is said to be *non-excludable* when its consumption cannot reasonably or easily be denied to anyone. Once the good has been produced, its benefits and malice accrues to all. Individuals not contributing to the payment of the good cannot be excluded from consumption. The public good is *non-rival* in consumption when the consumption by one actor does not reduce the supply available to another.

- **Pure**: Goods that meet both criteria of non-excludability and non-rivalry.
- **Impure**: A public good that only partially meets the criteria of non-excludability and non-rivalry.
    - *Club*: A subclass of impure public goods that possess partially rival benefits that can be excluded at an affordable cost.
    - *Common pool resources*: A subclass of impure public goods, which are mostly non-excludable but rivalrous in consumption.
    - *Joint product***:** consists of those activities that yield two or more outputs or joint products, which may vary in their degree of publicness. As such, joint product outputs may be purely public, private, or impurely public. For example, a military alliance can through its formidable forces yield deterrence, an alliance-wide pure public good. If an enemy is kept from attacking, all allies gain from this deterrence. Because an alliance's arsenal and forces can also be used to provide disaster relief, coastal protection, and anti-insurgency actions, ally-specific benefits are also jointly derived from the same military assets.

Source: R. Kanbur and T. Sandler, 1999, 'The Future of Development Assistance: Common Pools and International Public Goods', *Policy Essay* No. 25, Washington, DC: Overseas Development Council

Goals vs. means criteria

The goals and means criteria are based on the place of public goods in the production chain.

- **Final global public goods**: are outcomes rather than 'goods' in the standard sense. They may be tangible (such as the environment, or the common heritage of mankind) or intangible (such as peace or financial stability.
- **Intermediate global public goods**: such as international regimes, contribute towards the provision of final global public goods.

*Source***:** I. Kaul, I. Grunberg and M.A. Stern, 1999, *Global Public Goods: International Co-operation in the 21st Century*, New York: Oxford University Press, pp. 13

Spatial dimension criteria

The spatial dimension scheme associated a spatial range of benefit spill-overs. This criteria is derived from the interest to develop a subsidiary theory of assistance, based on spatial and jurisdictional considerations.

- **National**: Goods generating non-rival and non-excludable benefits for a country. Examples include groundwater purification, defence and agricultural research findings.
- **Regional**: Goods generating non-rival and non-excludable benefits for a well-identified region are regional pure public goods. Eliminating pests indigenous to a region or curing a tropical disease are examples, since the gains are to multiple countries but not to the world at large.
- **Global**: Goods generating non-rival and non-excludable benefits for many countries. Benefit spill-overs are global for reducing global warming or stratospheric ozone depletion by cutting down on greenhouse gases and chlorofluorocarbons, respectively. Given global investment markets, the institution of sound financial practices in almost any country can benefit investors everywhere by curbing potential financial instabilities and their contagion. Sounder accounting, financial, and banking practices in Indonesia or Japan benefit investors world-wide.

Source: R. Kanbur and T. Sandler, 1999, 'The Future of Development Assistance: Common Pools and International Public Goods', *Policy Essay* No. 25, Washington, DC: Overseas Development Council

Type of activity

The type of activity criteria is based on a production/consumption distinction of the public good.

- **Core activities** aim to produce international public goods. These activities include global and regional programmes undertaken with a transnational, or multicountry interest in mind, as well as activities that are focused in one country but whose benefits spill over to others.
- **Complementary activities**, in turn, prepare countries to consume the international public goods that core activities make available, while at the same time creating valuable national public goods. Traditional country-based financial flows to support domestic policy and institutional reform and investment in infrastructure are primarily motivated by the benefits expected within the country. But these flows and the national public goods they help create may also enhance the country's ability to absorb the benefits of international public goods.

Source: World Bank, 2001, 'Effective use of development finance for international public goods', *Global Development Finance*, Ch. 5, Washington, DC: World Bank

Tangibility criteria

The tangibility criteria refers to whether the public good is physical or concrete or whether it elusive or insubstantial

- **Tangible**: environment, or the common heritage of mankind
- **Intangible**: peace, financial stability

Source: I. Kaul, I. Grunberg and M.A. Stern, 1999, *Global Public Goods: International Co-operation in the 21st Century*, New York: Oxford University Press, p. 13

Categories according to the nature of the global public good

According to the policy challenges they pose there are three main classes of global public goods:

- **Natural global commons**: the policy challenge here is sustainability and the collective action issue is overuse. Examples include the ozone layer and climate stability. These are known as 'stock variables' because they precede human activity.
- **Human-made global commons**: encompass a range of diverse goods (such as scientific and practical knowledge, the world's common cultural heritage and transnational infrastructure, such as the Internet) with the policy challenge being underuse. Collective action problems can take a variety of forms depending on the issues. For example, the underuse of the Internet can be attributed to illiteracy, language barriers, lack of resources to enable with access, etc.). These are also known as 'stock variables' because they have already been produced.
- **Global policy outcomes**: these tend to be less tangible goods that are typically plagued by undersupply, such as peace, health and financial stability. What differentiates these goods from the class of human-made global commons goods is that they are 'flow variables' or, a continuous effort is required to ensure that they are supplied

Source: I. Kaul, I. Grunberg and M.A. Stern, 1999, *Global Public Goods: International Co-operation in the 21st Century*, New York: Oxford University Press, p. 453

Type of benefit criteria

Type of benefit criteria identifies three types of benefit that tend to be non-excludable and non-rival, hence give rise to public goods – risk reduction, enhancing capacity, and direct provision of utility. Gradations within each of these types of benefits define the spatial range. Thus, it is the range over which the benefits apply, rather than the good itself that determines whether a public good is international or national. If the benefit is to reduce risk or provide direct utility, the public good tends to be international (in principle, everybody can benefit). However, if the benefit is to enhance capacity it is more likely that the spatial range is limited.

- **Risk reduction**: public good that provides a benefit in the form of reducing or eliminating risk, where the risk is a disutility (or in general a public bad). For example, reducing greenhouse gas emissions reduces the risk of global warming for everyone.
- **Capacity**: public good that provides benefit of enhancing capacity to produce goods (which may be public or private), where the enhanced capacity is the benefit available to all. It is the enhanced capacity that constitutes the public good, not necessarily the goods that may be produced as a result. An example would be research. In fact, it is the inherent public nature of research that gives rise to the market failure that encourages private companies to seek protection of intellectual property rights. Education and healthcare generally, insofar as both enhance capacity, have public good elements. Governance could also be included here, as it enhances capacity and 'good governance' does, in principle, provide utility to all. Institutions relating to global (regional) governance would contribute to global (regional) public goods, although in most cases governance is a national public good.
- **Utility**: public good that provides utility directly. Reducing environmental degradation of a common property resource, such as an ocean or forest, improves the quality of the natural resource. This provides a benefit and everybody can derive utility from the knowledge that the benefit has been provided. Examples include conservation, preserving biodiversity or wildlife. The increased quality can enhance the productivity and sustainability of the resource, and this generates externality benefits (capacity enhancement) that can be enjoyed by all. Reducing poverty has a public good element in the same sense, i.e. everybody can derive utility from the knowledge that poverty has been reduced. However, it is the knowledge that poverty has been reduced rather than the reduction of poverty *per se* that provides the public good. Furthermore, higher incomes (lower poverty) may enhance the ability of governments to provide public goods and of individuals to consume them. Thus, poverty reduction can be seen as a complementary public good.

Source: O. Morrissey, D. Willem te Velde and A. Hewitt, 2001, 'Defining international public goods: conceptual issues', *World Bank Study on International Public goods*, London: Overseas Development Institute: forthcoming.

Sector criteria

These criteria are based on the areas for the various global public goods – environment, health, knowledge, security/peace and governance. Three of these categories are largely associated with a benefit from reducing risk (environment, health and security) and two are primarily associated with enhancing capacity (knowledge and governance).

- **Environment**: the core public good or activity is to provide environmental quality. As most aspects of environment have international dimensions, this is a core international public good. The benefits are mostly of the risk-reduction or direct utility form, at least one of which (if not both) will tend to have an international spill-over range. For example, reducing industrial pollution around a city will improve air quality (and reduce the risk of illnesses) in the locality. However, the reduced emissions may contribute to reducing global pollution (and is thus a complementary activity) and this provides a utility benefit to all. Conservation or preservation activities in, for example, forests or nature reserves are basically national or local public goods, but they do provide potential utility to all and therefore have an international dimension. Such activities may be core at a national or local level, but complementary at an international level (in particular, they do facilitate consumption of environmental public goods).
- **Health**: the core public good is to increase health quality, and this applies at the national and international level. Eradication of disease is the core activity for the international public good. Research on how to eradicate or control the disease is a complementary activity to producing the public good, and may be at a national or international level. If disease is contagious, each afflicted country has to be able to contribute to control and reduction. This implies a health service, a national public good that is a complementary activity to providing the international public good. Similarly, if a health-care system exists (clinics, personnel, drugs, etc.) this facilitates consumption of the public good.
- **Knowledge**: knowledge itself is an international public good. Core activities at the global level would include international research centres. For example, the International Agricultural Research Centres (IARCs) contribute both to global knowledge and to research on how to provide environmental public goods. Research centres are a core knowledge activity, but are also complementary activities to providing other categories of public goods. Complementary activities would also include those that contribute to disseminating knowledge, such as maintaining internet sites and global networks (e.g. the Global Development Network). The provision of schools and teachers (a national public good in the form of education) and access to information are complementary activities that facilitate the use of knowledge.
- **Security**: global peace would be an international public good. Activities that contribute to peace or security are core activities, such as conflict prevention. Peace-keeping could be classified as a core activity, although is as appropriately deemed a complementary activity that contributes to the production of conflict prevention. Similarly, institutions, such as the UN Security Council would be complementary activities at an international level, while policing is complementary at a national level. Reducing poverty is a complementary activity as it helps the consumption of utility from peace and security.
- **Governance**: stable good governance is a public good, both in providing utility and enhancing capacity (and potentially in reducing the risk of insecurity). The core activity would be establishing global institutions to co-ordinate the provision of, if not to directly provide, international public goods. Thus, the UN system and the Global Environment Facility, for example, are core activities. At the national level, good government would be a core activity but providing government capacity would be complementary to this.

Source: O. Morrissey, D. Willem te Velde and A. Hewitt, 2001, 'Defining international public goods: conceptual issues', *World Bank Study on International Public goods*, London: Overseas Development Institute: forthcoming.

Annex C

List of persons interviewed

Name	Position	Institution
Eduardo Aninat	Deputy Assistant Director for Latin America	IMF
Mervat Badawi	Director	Technical Department Arab Fund For Economic and Social Development
Lennart Båge	President	International Fund for Agricultural Development
Colin Bradford	Professor	American University
Margaret Catley Carlson	Chairperson	Global Water Partnership
Michael Edwards	Director – Governance and civil society programme	The Ford Foundation
Mohamed El-Ashry	Director	Global Environment Facility, The World Bank
Shahrokh Fardoust	Senior Economic Adviser, Office of the Sr. Vice president and Chief Economist	The World Bank
Marco Ferroni	Office of Evaluation and Oversight	Office of Evaluation and Oversight, Inter-American Development Bank
Ramon Pablo Guerrero	Head of Secretariat	The World Bank
David Hamburg	President Emeritus	Carnegie Corporation of New York
Ruth Jacoby	Ambassador – Economic and Social Affairs	Permanent Mission of Sweden to the United Nations
Lisa Jordan	Programme Officer Governance and Civil Society Peace and Social Programme	The Ford Foundation
Inge Kaul	Director Office of Development Studies	United Nations Development Programme
Kanta Kumari	Programme Manager, Biodiversity	Global Environment Facility
Katell Le Goulven	Policy Analyst, Office of Development Studies	United Nations Development Programme
Uma Lele	Deputy Director	Operations Evaluation Department, World Bank
Mervat Madawi	Deputy Director	Arab Fund
Katherine Marshall	Director and Counsellor to the President	Development Dialogue on Values and Ethics, World Bank
Dan Martín	Director and Sustainable Conservation Development	The John and Catherine T. Mac Arthur Foundation
Rohinton Medora	Director of Economics Programme	International Development Research Centre
Maureen O'Neil	President	International Development Research Centre
Robert Piccioto	Director-General	Operations Evaluation Department, World Bank

Mario Ramos	Programme Manager, Biodiversity	Global Environment Facility
Sir Shridath Ramphal	Former Secretary-General	Commonwealth
Amitav Rath	Director	Policy Research International
Liliana Rojas-Suarez	Visiting Fellow	Institute for International Economics
Enrique Rueda Sabater	Senior Advisor	The World Bank
Richard Sandbrook	Director	Global Mining Initiative
Jeffrey Sachs	Director	International Development Center, Harvard University
Mirjam Schnupf	Policy Analyst, Office of Development Studies	United Nations Development Programme
Alex Shakow	Secretary	Development Committee of the World Bank and the IMF
P.J. Simmons	Senior Researcher	Carnegie Endowment for International Peace
Gordon Smith	Director	Centre of Global Studies University of Victoria
James Gustave Speth Dean	Dean and Professor	Yale University School of Forestry & Environmental Studies
Joseph Stiglitz	Professor	Institute for International Studies Stanford
Eric Swanson	WDI Team Leader – World Development Indicators Development Data Group	The World Bank
Necla Tschirgi	Director	Peacebuilding and Conflict Prevention Unit, International Development Research Centre
Emmanuel Tumesiime-Mutibele	Deputy – Minister of Finance	Government of Uganda
James Wolfenson	President	World Bank
Cristina Zarowsky	Senior Scientific Advisor – Health Programme and Partnership Branch	International Development Research Centre

Annex D

Acronyms and abbreviations

AIDS	Acquired Immune Deficiency Syndrome
APEC	Asia Pacific Economic Community
ASEAN	Association of South East Asian Nations
CDF	Comprehensive Development Framework
CBD	Convention on Biological Diversity
CDM	Clean Development Mechanism
CER	Certified Emissions Reductions
CGIAR	Consultative Group of International Agricultural Research
CPR	Common Pool Resources
DAC	Development Assistance Committee of the OECD
ECB	European Central Bank
EU	European Union
EST	Environmentally sound technology
FDI	Foreign Direct Investment
FSAP	The Financial Sector Assessment Programme
FSF	Financial Stability Forum
FSO	Fund for Special Operations
G-7	Group of Seven Summit Countries (Canada, France, Germany, Italy, Japan, the United Kingdom and the United States)
GAVI	Global Alliance for Vaccines and Immunisation
GDP	Gross Domestic Product
GNP	Gross National Product
GPG	Global Public Good
HD	Human Development
HIPCs	Heavily Indebted Poor Countries
IADB	Inter-American Development Bank
IBRD	International Bank for Reconstruction and Development
IDA	International Development Association
IFI	International Financial Institution
IMF	International Monetary Fund
IPCC	International Panel on Climate Change
MDBs	Multilateral Development Banks
MERCOSUR	Southern Cone Common Market (Argentina, Brazil, Chile, Paraguay and Uruguay)
NATO	North Atlantic Treaty Organisation
NGOs	Non-Governmental Organisations

NICs	Newly Industrialised Countries
OAS	Organisation of American States
ODA	Official Development Assistance (colloquially called 'aid') referring to any financial transfers involving governments with a grant element of at least 25 per cent
ODF	Official Development Finance
OECD	Organisation for Economic Co-operation & Development (which comprises 23 developed country members as well as Mexico and Turkey)
OUA	Organisation of African Unity
PRSPs	Poverty Reduction Strategy Papers
Sida	Swedish International Development Cooperation Agency
SDR	Special Drawing Rights
TA	Technical Assistance
TNC	Transnational Corporation
UN	United Nations
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Programme
UNFCCC	UN Framework Convention on Climate Change
UNICEF	United Nations Children's Fund
UK	United Kingdom
WEU	Western European Union
US	United States of America
WHO	World Health Organisation

This study was commissioned by the *Development Financing 2000* project within the Swedish Ministry for Foreign Affairs. The purpose of the project is to increase awareness, knowledge and international commitment to a strong, effective and well-funded multilateral system for development.

The study aims at bridging the academic discussion on global public goods with ongoing international policy processes. A conceptual framework for assessing financing and institutional arrangements for the provision of global public goods is suggested. Some of the key issues brought forward are:

- A global public goods delivery system
- A decision tree for evaluating financing options for global public goods
- A possible division of labour for the international community
- Case studies on climate change, biodiversity, financial stability, peace and security, and HIV/AIDS

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