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## **Cross-Border Externalities, International Public Goods and Their Implications for Aid Agencies**

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# **CROSS-BORDER EXTERNALITIES, INTERNATIONAL PUBLIC GOODS AND THEIR IMPLICATIONS FOR AID AGENCIES\***

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## **Abstract**

**The interplay between cross-border externalities, international public goods and development assistance, and the relationship between this interplay and the conventional rationales for development assistance, will be a key problematic facing aid agencies in the next decade. This note sets out a conceptual framework for thinking through the problematic, and draws some tentative implications for these major actors in global governance.**

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\* Comments for Conference on Global Tensions in honor of Ester Boserup, Cornell University, March 9-10, 2001. The arguments made here are based on and developments of ideas presented in R. Kanbur, T. Sandler and K. Morrison, The Future of Development Assistance: Common Pools and International Public Goods, Overseas development Council and Johns Hopkins, 1999; R. Jayaraman and R. Kanbur, "International Public Goods and the Case for Foreign Aid," in I. Kaul, I. Grunberg and M.A. Stern (eds.), Global Public Goods: International Cooperation in the 21<sup>st</sup> Century, Oxford University Press, 1999; R. Kanbur, "The Intersection of Development Assistance and International Public Goods", July 2000, [http://www.people.cornell.edu/pages/sk145/papers/Kanbur\\_Intersection.pdf](http://www.people.cornell.edu/pages/sk145/papers/Kanbur_Intersection.pdf); and R. Kanbur, "Aid, Conditionality and Debt in Africa", in Finn Tarp (ed), Foreign Aid and Development: Lessons Learnt and Directions for the Future, Routledge, 2000.

## I. INTRODUCTION

Cross-border externalities and international public goods have come to the fore in the development debate, and in the debate on global governance, like never before. This is both because there is greater awareness of these issues, and because advances in technology and trade have made the issues more important.

At the same time, there is considerable soul searching on development assistance and on the issue of “aid effectiveness.” There is a strong feeling that the aid delivery mechanisms of the past three or four decades have not contributed as much to development and poverty reduction as they might have done. Relatedly, there is dwindling political support among rich country taxpayers for continuing traditional patterns of aid (“aid fatigue”), although there seems to be support generally for helping those in need.

Given this conjuncture of aid assessment and the emergence of the issue of cross-border externalities and international public goods, several questions arise. What are the implications of the latter for the former, and vice versa? What does the presence of cross-border externalities do to the case for aid? Do international public goods provide an additional modality for the delivery of aid? What does the supply of international public goods imply for the organization of aid delivery, and especially for aid agencies?

The interplay between cross-border externalities, international public goods and development assistance, and the relationship between this interplay and the conventional rationales for development assistance, will be a key problematic facing aid agencies in the next decade. This note sets out a conceptual framework for thinking through the

problematic, and draws some tentative implications for these major actors in global governance.

## **II. CONCEPTS AND DEFINITIONS**

A cross-border externality occurs when actions of one country have consequences for another, unmediated by classically competitive markets. Examples of negative cross-border externalities are: water use in countries that share rivers and water tables, atmospheric pollution, infectious disease control, financial contagion, and the spillover effects of civil war.

A pure international public good is one whose benefits are non-rival and non-excludable. Non-rivalry means that one country benefiting does not preclude another from doing so, should it wish to. Non-excludability means that no country can in fact be excluded from benefiting. Most international public goods are not pure, but they all have significant elements of non-rivalry and non-excludability. This note will consider three types of international public goods: (i) country specific development (growth, poverty reduction and improvement in social indicators) which mitigates negative cross-border externalities, (ii) inter-country mechanisms for managing cross-border negative externalities (such as water management agreements or an international lender of last resort), and (iii) non-country specific investments in basic scientific research (e.g., development of a vaccine for malaria).

A key point to be made is that while the property of non-rivalry may be technologically determined, the property of excludability is determined by technology and by policy. The benefits of INTELSAT, for example, are non-rival but only potentially non-excludable. With some investment in scrambling technology, it can be

turned into a private good for the benefit of those who pay. The findings of basic genetic research have the capacity to benefit many simultaneously because of their inherent nature, but whether they will in fact be made available to many is a matter of choice.

Aid is the unrequited transfer of resources, financial or non-financial, from rich countries to poor countries. Thus a financial transfer as the result of paying market price for a commodity would not be aid. Paying a higher than market price, or selling at below market price, would be aid. As of now, lending at below market rates is a significant form of aid, of the same order of magnitude as pure grants.

Aid agencies are governmental national or multilateral organizations which manage the flow of aid resources from donor to recipient governments. There are a large number of these agencies. In a typical African country, for example, there would be at least a dozen or more such agencies—IMF, World Bank, AfDB, European Union, UNDP, FAO, IFAD, WHO, USAID, DFID, KfW/GTZ, Caisse Francaise, OECF/JICA, CIDA, SIDA, DANIDA, NORAD, etc. These agencies also contribute, directly or indirectly, to the supply of international public goods.

### **III. AID AND COUNTRY SPECIFIC DEVELOPMENT AS AN INTERNATIONAL PUBLIC GOOD**

If country specific aid flows lead to country specific development, which in turn mitigates negative cross-border externalities, that aid could be seen as an international public good. If assistance to a domestic vaccination program in a poor country helps prevent the spread of infectious disease across borders, or if the assistance leads to infrastructure investment, an increase in incomes and thus a reduction in cross-border illegal migration, then aid is an international public good. Apart from benefiting the direct recipients, it benefits others, including perhaps the donors themselves.

Indeed, this line of argument has increasingly been used by aid advocates in rich countries to persuade an “aid fatigued” public to keep up support for aid. By helping the poor we help ourselves, so the argument goes. There are two issues that arise, one philosophical and one pragmatic. The philosophical question is—if the donor gets back direct and tangible benefits from the giving (over and above the “warm glow” of altruism or the satisfaction of a duty performed), then to what extent is the initial transfer unrequited? Is this not simply “purchasing” less infectious disease or fewer illegal migrants? There are those who believe that the case for aid must be made on its own terms, in terms of duty to a common humanity, rather than slipping into the rationale of getting something back in return.

The pragmatic question is whether aid in fact leads to development. There is a huge literature on the effectiveness, or otherwise, of country specific aid in engendering country specific poverty reduction, development and growth. This literature is not the focus of this note. Suffice it to say that the current assessment of aid is not very encouraging. Considerable theoretical and empirical work has gone into understanding the failure of aid and the failure of conditionality. The discussion on the latter has led to the conclusion that unless the domestic political economy of a country leads to it, there is very little that external pressure can do to induce a sustainable change in policy. At the same time, aid flows have been greatly influenced by the political economy of donors, especially during the cold war era. No wonder the record of aid appears so bad.

It is partly this failure of country specific aid that has raised the question of whether aid flows could be better used to deliver international public goods and hence

development and growth to poor countries. Let us therefore turn to the management of cross-border externalities and non-country specific investment in basic research.

#### **IV. MANAGING CROSS-BORDER EXTERNALITIES**

The central characteristic of a cross-border externality is the number of borders involved. Thus the mechanism for managing an externality, and the role of aid in this management, depends on the nature and spread of the externality. Conceptually, we can distinguish between two levels of spread—across poor countries only, and across rich and poor countries.

If the relevant externality, say water use, is restricted to a given number of poor countries, what role can aid play? Externalities give rise to a coordination problem. Each country following its own interest leads to actions that make all countries worse off than if they had coordinated their actions. In the case of water use, coordination might involve lower short run water consumption in each country to preserve the water table for the long run. But if coordination were easy, it would have already happened. Managing this externality requires at least three types of interrelated inputs—bringing the countries together to discuss and agree upon the problem and the coordinated actions, monitoring the coordinated actions, and compensation for the short run costs that result from the coordinated actions, relative to the option of breaking ranks.

The role of aid—resource transfers from rich to poor countries—should now be clear. The institutional setting for discussing and arriving at an agreement, and then monitoring and enforcing it, is not costless. To the extent that poor countries have to pay for this themselves, at least initially, coordination is less likely to happen. But the institutional resources are only a part of the story. The financial resources to meet the

short term costs of sticking to the agreement rather than breaking it are the key to an agreement holding, and these could be large—think of the agricultural demand for water and the socio-political consequences of restricting supply in the wake of a multi-country water conservation agreement. In fact, if there are no resources for compensation upfront, there will probably not be an agreement. The institutional and short term financial compensation costs of an agreement are central to achieving coordination and hence management of the externality. And since coordination makes poor countries better off than they otherwise would be, this activity has a claim on aid resources.

Let us now turn to the case where the externality is across rich countries as a group and poor countries as a group. Leaving to one side the case discussed earlier—where country specific aid leads to a reduction of negative externalities from poor to rich countries—consider the management of global externalities like atmospheric pollution or financial contagion. Mechanisms for managing these externalities are international public goods. But the mechanisms need resources to be put in place—institutional resources for arriving at and monitoring agreements, and financial resources for compensation to short term losers from the agreement. It would be understandable if the bulk of these resources came from the rich countries. In the short run, therefore, rich countries would most likely finance the provision of these international public goods. If the entire package is beneficial to poor countries, at least some of the resources expended can be seen as aid—indeed, there might be an argument for diverting some conventional aid resources to this channel.

The central question with these global arrangements is therefore whether they are in fact beneficial to poor countries or whether they are agreements between the rich

countries which are then imposed upon poorer countries, to their detriment. These are the central issues, for example, in managing the “race to the bottom” in labor and environmental standards through ILO or WTO, in managing atmospheric pollution through the Kyoto or Montreal accords, or in managing international financial instability through a new international financial architecture with varying roles for the IMF. A key indicator of the extent to which these arrangements are likely to be beneficial to poor countries, and hence a key indicator in deciding whether resources expended in these arrangements could count as “aid”, is the extent to which poor countries have a voice in decision making and management.

## **V. INVESTMENT IN BASIC RESEARCH**

The findings of basic research satisfy one criterion of a pure public good—non-rivalry. Use by one party of this knowledge does not diminish the knowledge available to another party. So the central question is excludability and, as noted earlier, this is not just a technological construct, it is deeply tied to policy. In the early days of radio, no one could be excluded from receiving signals because the technology was not there to do so. With technological developments, first jamming and then scrambling, exclusion became possible. But whether exclusion was permitted was a policy question. Similarly, today, the findings of basic genetic research satisfy the non-rivalry property but not the property of non-excludability. In fact, we have a peculiar state of affairs where public sector researchers make available their findings to all, while private sector researchers have a right to keep them private.

A related issue is, research on what? Basic knowledge may be non-rival but its benefits could differ greatly from person to person. Basic knowledge on temperate crops

or on temperate diseases is no use in the tropics, and vice versa. Putting these two issues, of excludability and the type of research brings us to a dynamic new area in discussions of aid—the encouragement and dissemination of basic research into issues of concern to poor countries. This presents exciting possibilities but is not without its problems. We will illustrate with two examples—vaccine and crop research on the one hand, and social science research on the other.

It is now well known that some vaccines could save millions of lives in poor countries, and yet do not constitute sufficient of a market for the big pharmaceutical firms to invest in their development. The same is true of basic research into crop varieties in the tropics. In the past, public sector or non-profit sector entities conducted this basic research, and made the findings freely available to poor countries, as brilliantly exemplified by the work which led to the Green Revolution. The role of these entities has been declining over the last two decades, and basic scientific research is now concentrated in large Northern private sector companies.

Even if we accept that the private sector overcomes some of the incentive problems of large public sector organizations, the issue remains of how to use the sharper incentives of the private sector to generate basic research of benefit to poor countries. One suggestion on how to do this is the celebrated proposal for a Vaccine Purchase Fund, where private sector companies would be guaranteed purchases of the vaccine at a given price and quantity, if it were to be developed to pre-agreed standards. This is an ingenious device to overcome the excludability restrictions that go with private sector research, to in fact convert these findings into non-excludable benefits and thus supply a

truly international public good which will benefit the poorest countries. This clearly qualifies as aid, and is a candidate for channeling aid resources.

Finally on scientific research, attention must be drawn to a global issue where formerly public goods are being converted into private goods through the social and policy construct of intellectual property rights. The genetic properties of wild plants and grasses in poor countries are being privatized through the global system of intellectual property rights. Many of these are now owned by private companies and could represent a substantial resource transfer from poor to rich. Modifying the current legal regime to keep these public goods public could be as important a mechanism of (preventing negative) resource transfer to the poor as anything we have discussed so far.

Consider now social science research. It is often argued by some international agencies, for example by the World Bank in presenting itself as “the Knowledge Bank”, that one of their main contributions to development is the research that they do and the knowledge that they transfer about the success or otherwise of different development projects and strategies. This argument is made analogously to scientific research, only more so. Unlike the work of private sector pharmaceutical companies, international agency research is disseminated actively—to the extent possible, no one is excluded from these findings. The last point is clearly true. For example, World Bank output is widely available, it has one of the most accessed websites, its publications form the basis of courses at Universities in rich and poor countries, and so on.

There are, however, two issues. The first is straightforward—does an agency like the World Bank in fact do enough to gather together all the experience that its myriad

operations generate? The second issue is trickier, and relates to the nature of social science research and research by an operational institution.

The analogy with scientific research breaks down because social science research is often on contested terrain, across disciplines that do not necessarily share methodological precepts or criteria for empirical verification. Some would deny entirely the objectivity of social science research, preferring instead to examine the assumptions and motivations that researchers bring to the questions they ask and answers they provide. These concerns are multiplied when that research takes place in an operational organization whose operations can be controversial, and where it is felt by outsiders that preset positions are being supported through the research process. Whether this is actually true or not is in a sense beside the point. The central question is how credible is the research, and credible to whom? Here the dangers of doing research in an aid giving organization are apparent. Whether justified or not, critical responses to research on a country by a policy maker may be conditioned by the aid resources in play.

All this is to say that for social science research in aid agencies to lay claim to the mantle of an international public good, and hence to the resources that might flow from this association, extra efforts have to be made to ensure credibility and independence of research as seen by those it is meant to benefit—the poor countries.

## **VI. THE ORGANIZATION OF INTERNATIONAL PUBLIC GOODS SUPPLY: BASIC PRINCIPLES**

There are two basic tensions in conceptualizing the organization of international public goods supply. The first is the tension between organizing supply as close as possible to the beneficiaries, versus taking advantage of the economies of scale. The

second is between organizing supply along narrowly defined sectoral lines, versus taking advantage of the economies of scope. Let us consider each of these in turn.

If there were no other considerations, then the institution for management of a cross-border externality should be closest to the borders across which there is the externality. If there is a three country riparian rights issue in Africa, there is no reason why there should be a global institution set up to manage it. The principle of subsidiarity suggests this should be a three-country set up. But, of course, if there is another three country problem involving three other countries, and other combinations of borders, there could be some gains from economies of scale in having an institution set up to deal with cross-border problems in general, no matter where they occur. It is difficult to know a priori at what level of aggregation the costs and benefits will balance out, but perhaps a good start is to think of regional institutions as primarily dealing with cross-border problems in their regions, and truly global institutions being brought in for problems that cross regional borders.

Similarly, it makes sense to have one institution deal with all cross-border problems of a narrowly defined type. But economies of scope might be reaped by grouping all health issues into one institution, all water issues into another, financial contagion issues into yet another, and so on. There may still be cross linkages—for example between water and health, but there is a happy medium defined by broad sectoral categories. Investment in basic scientific research does not have a cross-border aspect to its organization, only a sectoral one, so similar considerations apply here, although it can be argued that in the case of social science research an integrative function across sectoral research may be needed.

Arguments from first principles would thus suggest an organizational structure for the provision of international public goods which is clustered around broad sectors, with groupings by regions within each sector.

## **VII. IMPLICATIONS FOR AID AGENCIES**

In reality, we have what we have on the ground—myriad agencies built up and added through accretion over half a century, some of whose original rationales are now lost in the mists of time but which survive as expressions of one political interest or another in the realpolitik of aid delivery mechanisms. While there are periodic attempts to start a discussion of rationalization of the current mess of agencies, and the recent spate of grand discussions of the international financial architecture are an example of this, it is highly unlikely that there will be any clean slate to start from. Rather, reform will have to focus on the agencies as they currently exist and work from that. What, then, are the implications of the conceptualization and discussion in this note for the operations of aid agencies, so far as international public goods are concerned?

The first and most important is that there will have to be a relative shift of resources from conventional country specific aid to international public goods as defined in this note. This is natural. When a new opportunity to deploy resources to reduce poverty comes along, it should lead to some diversification from older methods. This is particularly so when the older mechanisms do not seem to be delivering, although efforts are under way to improve them.

But there is a caveat to this conclusion. This is that it is in turn based on the assumption that the international public goods will in fact benefit the poor. While for some, for example those that deal with cross-border externalities among poor nations, this

is more likely, for others, for example those that deal with externalities across rich and poor countries, this is more open to question. This leads us to focus, for example, on global management of trade through WTO, or global mechanisms for containing financial contagion, or global social science research at the World Bank, to ensure that they do indeed benefit poor nations. As noted earlier, a key indicator is the extent to which poor nations have a voice in the management of these arrangements.

The argument developed in this note suggests a division of resources more heavily skewed towards sectoral agencies in sectors that have clear international public goods implications. The WHO is a leading example, and the conceptualization speaks to a debate that has been going on in the proper focus for this agency. There has been an argument that WHO has been too much involved in country specific health programs and not enough on programs with clear cross-border and international public goods dimensions. The WHO should clearly be given the resources to manage such issues as infectious disease control or encouraging basic vaccine research. The principles developed in this note support this position.

The argument developed in this note also suggests a division of resources more heavily skewed towards regional institutions. While global institutions will be needed to manage truly global issues, the principle of subsidiarity leads to a balance which would build up regional institutions to deal with regional cross-border issues. The fact that at present some regional institutions, in Africa for example, may not be fully ready to take over regional tasks is important and relevant in designing a pragmatic strategy, but only emphasizes further the task of building up the capacity of these institutions.

## VIII. CONCLUSION

This note posed the problematic of deployment of aid resources in the context of cross-border externalities and international public goods, and in the context of doubts about the effectiveness of country specific aid. It developed a conceptual framework for thinking through the interactions, derived principles for organizing the supply of international public goods, and arrived at implications for the system of aid agencies as it actually is, not as we might wish to design it de novo.

Of course, the aid agencies will go on, responding to their specific political mandates and continuing to deliver country specific aid. But the new realities mean that the aid system will have to (i) allocate a greater share of aid resources to cross-border externalities and international public goods, (ii) ensure that mechanisms for managing global externalities have adequate poor country voice and actually do benefit poorer countries, (iii) skew resources more in favor of sectoral agencies in sectors with major international public goods and (iv) build up the capacity of regional institutions to deal with cross-border externalities within their regions.

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