UNIVERSITY of STRATHCLYDE
INTERNATIONAL PUBLIC POLICY INSTITUTE

Maximising the benefits of Foreign Aid:
leveraging in-country financing

Professor Alec Morton and Dr Ashwin Arulselvan,
Department of Management Science
University of Strathclyde

Making a difference to policy outcomes locally, nationally and globally

POLICY BRIEF

Maximising the benefits of Foreign Aid: leveraging in-country financing

Alec Morton, Ashwin Arulselvan

Abstract

This Policy Brief outlines an alternative approach to maximising the benefit of donor aid in low income countries. It has policy implications for the allocation of aid by Non-Governmental Organisations (NGOs) and national governments.

1. Introduction

In this Policy Brief we consider the responsibilities of donor agencies (e.g. the Global Fund, the African Development Bank, Oxfam, a rich country Department for International Development) to best disburse development aid. We take the view that donor agencies have a moral responsibility to ensure that such funds are spent in an efficient way, which improves the lot of the intended beneficiaries to the greatest possible extent. This is not a controversial view, indeed typically it is the espoused view of donors themselves.

In this paper we discuss this issue from the point of view of *allocative efficiency* rather than *technical efficiency*: that is the question of "doing the right things" rather than of "doing things right". (Of course we reaffirm that technical efficiency – delivering programmes in a competent way – is very important.) We discuss what allocative efficiency means in the context where one is a donor seeking to finance, for example, health interventions in partnership with a country government which has its own indigenous domestic revenue stream.

In particular, we argue that the traditional cost effectiveness principle of ordering based on cost effectiveness and proceeding down the list until the budget is exhausted is inappropriate in this context. The intuition behind our critique is that by so doing, the donor takes the pressure off the domestic government to contribute its own resources to achieve the intended benefit. In contrast, we propose two alternative decision rules which target funding at what are to the country government marginal projects, and demonstrate their superiority with respect to a worked example. In a companion technical paper (in preparation) we present a mathematical analysis of this and related approaches.

2. Preventing HIV Infections – a worked example

We consider the following example. The government of a low income country C has the opportunity to invest in a variety of HIV prevention activities, as shown in Table 1. The total cost and number of infections averted from these activities are as shown (the data is roughly based on Hutton *et al*, 2003). We can compute the cost of averting an HIV infection (observe that the activities are ordered in order of decreasing cost-effectiveness). We suppose that country C makes its decisions on a cost effectiveness basis based on the opportunity cost of spending on other sectors. In particular, country C considers that spending more than $300 of its domestic resources to avert a single HIV infection is not good value for money as it can achieve equivalent or more benefit (from its point of view) by investing $300 in some other sector. This sector may have nothing to do with health; for example, it may be military spending which country C feels will enable it to seize resources of neighbouring countries.

If country C follows standard cost effectiveness advice, it will implement activities 1 and 2 (in italics) on the list in Table 1. It will spend **$89,575** and will prevent **3,068 infections**.

Table 1. Data for HIV prevention activities in country C

	Total Cost $	Number of infections averted	Cost per HIV infection prevented (US$, 2002)
1. Peer group education—sex workers	*39,575*	*2473*	*16*
2. Safe blood transfusion	*50,000*	*595*	*84*
3. Peer group education—young people	423,500	799	530
4. Mass media and social marketing of condoms	1,300,000	2434	534
5. Peer group education—high risk men	500,000	862	580
6. Targeted AZT to pregnant women	300,000	319	939
7. Voluntary testing	310,000	261	1190
8. Targeted advice for breast feeding	150,000	62	2424
9. Targeted treatment of STIs	560,000	204	2748

Suppose there is a donor D which can supply $1m to country C to prevent HIV infections; how should it allocate its funding? One option for D would be proceed down the list of HIV prevention activities and allocate funding to activities in cost effectiveness order until the money is exhausted. In this case it would implement activities 1—3 completely and 35% of activity 4 before its money runs out. This means that there are no remaining opportunities which have a cost effectiveness better than £300 per infection averted and country C will spend no money on

HIV prevention. Hence, under this scenario, **$1,000,000** will be spent by donor D on HIV prevention and **4,779** infections will be averted.

3. Maximising aid benefit; proposed donor decision rules

Clearly, this £1m is being spent well in the sense that many HIV infections are being averted; but can more be achieved? We observe that the financing from D is in this example taking the burden off (i.e. substituting for expenditure by) country C, which is now free to spend resources on other, possibly undesirable, activities. In order to maximise aid donor benefit, we propose two decision rules for donor D.

Our first decision rule is as follows:

Rule 1. *D should fund only interventions which have a cost effectiveness which is worse than $300 per infection averted;*

In this case, country C will spend $89,575 (on activities 1 and 2) and will prevent 3,068 infections, freeing up donor D to fund intervention 3 and 44% (rather than 35%) of activity 4, preventing 1,878 infections. Thus, in total **$1,089,575** will be spent by both C and D to prevent **4,946** infections.

Our second decision rule is:

Rule 2. *D should fund only interventions which have a cost effectiveness worse than $300 per infection averted; and should fund such interventions only in part by subsidising them to bring the costs down to $300 per infection averted*.

The required subsidies are calculated in Table 2 below.

Table 2: Data for selected HIV prevention activities in country, with donor D subsidies

	Original Total Cost $	Number infections averted	Donor contribution $	Subsidised cost	% of cost met from subsidy	Subsidised cost/ infection averted	**Donor $/ infection averted**
3.Peer group education—young people	*423,500*	*799*	*183,800*	*239,700*	*43%*	*300*	***230***
4. Mass media and social marketing of condoms	*1,300,000*	*2434*	*569,800*	*730,200*	*44%*	*300*	***234***
5. Peer group education—high risk men	*500,000*	*862*	*241,400*	*258,600*	*48%*	*300*	***280***
6. Targeted AZT to pregnant women	300,000	319	204,300	95,700	68%	300	**640**
7. Voluntary testing	310,000	261	231,700	78,300	75%	300	**888**
8. Targeted advice for breast feeding	150,000	62	131,400	18,600	88%	300	**2119**
9. Targeted treatment of STIs	560,000	204	498,800	61,200	89%	300	**2445**

In this example, once the cost effectiveness of an intervention is improved to the extent that it reaches $300 per infection averted, it now becomes cost effective for country C to invest in the activity.

In this example, D will spend $995,000 (and thus have a small residual fund) to subsidise activities 3, 4 and 5. Country C will spend £1,228,500 of its own resources on activities 3, 4 and 5 (in italics), plus $89,575 on activities 1 and 2. The total amount of investment by both D and C is therefore **$2,313,075** and the total number of infections averted is **7,163**. The cost effectiveness of the investment for the donor D is shown in the rightmost column of the Table 2.

4. Conclusions

It is clear from the above worked examples that (at least in our simple model) allocative rules for donor D which recognise country C's own domestic policy objectives – which include the health of its population, but also other objectives which may be less legitimate – are more effective in securing contributions from country C towards donor D's aid objectives. For the data in this example, these rules lead to a more than doubling of expenditure (from $1,000,000 to $2,313,075) and an almost doubling of benefits (from 4,779 to 7,163 infections averted) against the standard comparator model where the donor applies the standard cost effectiveness decision rule.

This approach raises a number of issues. First, there are clearly practical questions in the *external* assessment of the relative cost-effectiveness of policy interventions in country C and it should be recognised that this may depend on the scale of the investment required to meet a policy target in country C. Second, this approach also raises policy questions for donor D and the extent to which it wishes – explicitly or implicitly – to influence the investment made by country C in its own domestic policy priorities – in the policy field chosen by D, in the this case HIV infection. These considerations will be dealt with more fully in the accompanying technical paper.

Reference

Hutton G, Wyss K, N'Diekhor Y. (2003) Prioritization of prevention activities to combat the spread of HIV/AIDS in resource constrained settings: a cost-effectiveness analysis from Chad, Central Africa. *International Journal of Health Planning M*; **18; 117-136**.

About the authors:

Alec Morton is Professor of Management Science at the University of Strathclyde. His main interests are in decision analysis and health economics. Alec Morton is an active member of the **Centre for Health Policy**, part of the **International Public Policy Institute (IPPI)**, University of Strathclyde.

Ashwin Arulselvan is a lecturer in Management Science at the University of Strathclyde.
His research focus is on discrete mathematics and its applications.

Contact details (corresponding author):

Professor Alec Morton
School of Management Science
Strathclyde Business School
University of Strathclyde

t: +44 (0)141 548 3610
e: alec.morton@strath.ac.uk

Dr Ashwin Arulselvan
School of Management Science
Strathclyde Business School
University of Strathclyde

e: ashwin.arulsevan@strath.ac.uk

International Public Policy Institute (IPPI)
McCance Building, Room 4.26
University of Strathclyde
16 Richmond Street
Glasgow G1 1XQ

t: +44 (0) 141 548 3865
e: ippi-info@strath.ac.uk

The International Public Policy Institute

IPPI focuses on global policy challenges in energy, future cities, health, economic development, government and public sector policy, education and social policy. IPPI draws on expertise from across the Humanities and Social Sciences, Strathclyde Business School, Science and Engineering and takes an inter-disciplinary approach to public policy challenges.