

AGENCY FOR INTERNATIONAL DEVELOPMENT WASHINGTON, D. C. 20523 <b>BIBLIOGRAPHIC INPUT SHEET</b>		FOR AID USE ONLY <i>Batch 87</i> ARDA	
1. SUBJECT CLASSIFICATION	A. PRIMARY Development and economics	DD00-0000-0000	
	B. SECONDARY Public administration		
2. TITLE AND SUBTITLE Public finance aspects of a basic needs strategy; some research issues			
3. AUTHOR(S) Curry, R.L.			
4. DOCUMENT DATE 1978	5. NUMBER OF PAGES <del>320</del> 330	6. ARC NUMBER ARC	
7. REFERENCE ORGANIZATION NAME AND ADDRESS  AID/IIA/EA			
8. SUPPLEMENTARY NOTES ( <i>Sponsoring Organization, Publishers, Availability</i> )			
9. ABSTRACT The purpose of this paper is to: 1) identify some of the problems and issues in designing of public sector policy in support of basic needs objectives, with a primary focus on pricing policy for public services and public finance; 2) raise some aid policy issues for donors; and 3) suggest a research design for addressing some of these problems in detail in the context of individual LDCs. Numerous questions have been raised about the nature of LDCs and donor policies and programs that are more appropriate for the pursuit of basic human needs (BHN) objectives within the context of self-sustaining, broadly based economic development. The first part of this paper summarizes briefly key elements in a BHN strategy and their linkages to the public sector. Subsequent sections review available estimates for fixed and recurrent costs in the provision of public services, identify alternatives for public service pricing and financing, raise some preliminary issues for aid policy and provide a tentative research design. The objectives of a BHN strategy are the attainment of particular standards of well-being for the poor over time. Among such standards is the ability to attain minimum levels of consumption of such necessities as food, health, shelter and education. The amount of investment and recurrent costs of such a program depend on resources required to construct, maintain and operate a BHN network that is designed to serve a target population with goods and services of various qualities and quantities. Costs increase as more people are served, with larger quantities delivered through higher quality networks. However, broader and more complex systems could reduce unit costs given potential complementarities and interdependencies among BHN items. Research at this point should concentrate on public sector activities in water and sewerage, basic health,			
10. CONTROL NUMBER <i>PN-AAF-009</i>		11. PRICE OF DOCUMENT	
12. DESCRIPTORS Financing aspects Human rights Public services Research		13. PROJECT NUMBER	
		14. CONTRACT NUMBER AID/IIA/EA	
		15. TYPE OF DOCUMENT	

housing, sanitation and education. Country-specific research could either seek to identify minimum standards of consumption that are necessary for the target group's well-being, or use existing information or standards and consumption gaps and proceed directly to costs. The first approach would be more complete and useful for planning purposes, the second would require less research time and funding and would not run the risk of delving into "sensitive data".

AID/IT/EA/A

PUBLIC FINANCE ASPECTS OF A BASIC NEEDS STRATEGY:  
SOME RESEARCH ISSUES

Robert L. Curry  
AID/Washington  
April 26, 1978

PUBLIC FINANCE ASPECTS OF A BASIC NEEDS STRATEGY:  
SOME RESEARCH ISSUES

- A. Introduction.
  - 1. Appropriate Public Sector Involvement.
  - 2. Implications for Public Finance.
- B. BHN Strategy and Public Sector Policy.
  - 1. Consumption (Demand).
  - 2. Production (Supply).
    - a. Quantity, Quality Pricing.
    - b. Public Finance.
    - c. Donor Policy Regarding Recurrent Cost.
- C. Cost Aspects of the BHN Strategy.
  - 1. Global Estimates.
    - a. Investment Cost.
    - b. Recurrent Cost.
  - 2. National and Local Cost Issues.
- D. Pricing of Public Sector Activities.
  - 1. Block Price Schedule.
  - 2. General Fund Finance.
  - 3. Policy Implications for Donors.
- E. A Suggested Research Design.
  - 1. The Supply Side.
  - 2. The Demand Side.
  - 3. Public Finance and ODA.
  - 4. Field Research Proposal.

A. INTRODUCTION.

The recent emphasis placed by the U.S. and other developed country donors in promoting developing country strategies that aim to address basic human needs objectives has raised numerous questions about the nature of developing countries and donor policies and programs that are most appropriate for the pursuit of basic needs objectives within the context of self-sustaining, broadly based economic development.

Some of the questions focus on the appropriate role of the developing countries public sector in general and public finance policy in particular in promoting basic needs objectives. It is generally agreed that expanding supply of such basic services as health, sanitation, and education for the poor which have traditionally been extended by the public sector should be an important component of any basic needs strategy. But the particular implications of the strategy for overall resource allocation, pricing of services, public resource requirements and general public sector involvement have not been examined in detail. Similarly, it is desirable to analyze in depth the nature of appropriate public sector interventions in the supply of food, shelter and other goods and services which are customarily produced in part or in whole by the private sector but whose

consumption levels are critical to the satisfaction of basic needs of the poor. These questions are especially important to U.S. bilateral aid programs which tend to focus on assistance to agriculture, health and human resources development.

The purpose of this paper is to: (a) identify some of the problems and issues that need to be addressed in the design of public sector policy in support of basic needs objectives with a primary focus on pricing policy for public services and public finance; (b) raise some aid policy issues for donors; (c) suggest a research design for addressing some of these problems in detail in the context of individual developing countries.

The first part of the paper summarizes briefly key elements in a BHN strategy and their linkages to the public sector. Subsequent sections review available estimates for fixed and recurrent costs in the provision of public services, identify alternatives for public service pricing and financing, raise some preliminary issues for aid policy and provide a tentative research design for exploring some of the problems in more detail in the context of a particular developing country.

B. BHN STRATEGY AND PUBLIC SECTOR POLICY.

The objectives of a BHN strategy can be defined in terms of attainment over time of particular standards of well-being for the poor. There are many tangible and intangible components of well-being. Among the tangible ones is the ability of individuals to attain minimum levels of consumption of the necessities of life such as food, health, shelter, and education - without which a person has little chance to lead a meaningful existence.

There are two necessary conditions for achieving such consumption levels. First, there must be adequate overall production and supplies of the needed goods and services, distributed in forms and geographic areas suitable for meeting the basic needs of the poor. Secondly, the poor must have enough income to be able to acquire these goods and services. These two objectives - sufficient income and adequate production - are highly interrelated but conceptually distinct, as for example, in the national income and product accounts. They are interrelated in that the ability of poor people to meet their dietary needs may depend on their capability to grow their own food. Further, the adequacy of production and supply of needed goods and services will in general have an

effect on their prices, which in turn will help determine the sufficiency of a given level of income. At the same time the distinctions between income and production objectives are crucial. For purposes of more completely satisfying basic needs, it does little good to achieve adequate overall food supplies, as many countries have, if the poor have insufficient income to obtain food. Similarly, it is of limited value to achieve higher income levels for the poor if there are no water or health facilities nearby, or if rising food prices erode the purchasing power of that income.

Supply of essential goods and services can be divided into supply of goods and services customarily provided through the public sector (though not necessarily gratis) and supply of other goods and services which are usually produced in the private sector. Similarly, total incomes of the poor depend on their earned income and on transfers. Earned income, in turn, comprises in general returns to labor through employment and returns on assets such as land. Transfers might take the form of direct government cash grants or indirectly through the provision of essential goods and services supplied by the public or private sector at subsidized prices.

Public sector action can affect the income levels of the poor through policies and programs which promote employment, improve human capital, expand their physical assets or provide transfers. Public sector policy will also affect the supply both of goods and services produced in the public sector as well as those produced in the private sector. Accordingly, a key role for public sector policy is the forging of links through appropriate planning between the supply of basic goods and services and the effective demand for them; that is, matching the linkages so that increased effective demand in the form of additional income for the poor is matched by a sufficient expansion in supply of the goods that they consume.

This paper and the proposed research will try to address the following more narrow set of issues and government policies in support of BHN objectives:

a. The quantity, quality and pricing of public sector services as well as other goods and services not directly supplied by the public sector but whose availability is important to the attainment of basic needs objectives.

The goods and services usually identified with satisfaction of basic needs encompass food, water and sewerage, basic

health and sanitation, housing and other forms of shelter and basic education and training. Some of these goods and services are customarily produced and supplied in most developing countries mainly through the private sector, (e.g., food). However, even in the case of food, government action, e.g., through publicly supported agricultural research or the establishment and maintenance of support prices will influence total supply.

Other items are made available largely through public sector activities (basic health and education). The public sector may supply goods and services directly or support their provision through coordination of production and distribution activities.

Still other items are provided through mixed public and private sector activities (water and sewerage -- investment may be public but provision may be through private companies whose activities are loosely coordinated by government). Public sector involvement in production of some of these services depends on a number of factors. Private suppliers may be unwilling to invest in projects that require relatively long gestation or pay-off periods. They may also be unable to invest in projects requiring high capital or investment

costs whose magnitudes prohibit private investment. Therefore, larger-scale water and sewerage systems, sanitation networks, and housing projects may not be attractive to private investors. However, smaller-scale, rural, labor-intensive local (rural) projects might provide outlets for private capital, but here public sector involvement is also likely due to natural monopolies (economies-of-scale), the vital or meritorious nature of the goods or services involved, convenience of distribution, the equating of social costs and benefits, and the need for integrated planning.

Government action may also be warranted on the demand side of consumption of goods and services essential for meeting basic needs. Individuals (or households) may find it difficult to internalize external social returns into their private consumption decisions. Because of lack of information or taste or preference patterns, they may "under-consume" certain items, e.g., nutritious food which merit added consumption if basic needs objectives are to be achieved. Government policy may involve provision of such services at subsidized rates to encourage additional consumption.

b. The public financing requirements for public sector involvement in direct or indirect supply and management involved in promoting a BHN strategy. To the extent that the price the public pays for obtaining goods and services provided directly or indirectly by the public sector falls short of covering the full amount of investment and recurrent costs in supplying these goods and services, there is a fiscal burden that must be borne through general public revenues. The question is

whether the public sector in LDCs can generate these revenues through taxation or through reallocation of existing revenues (recognizing opportunity costs). A further possibility is assistance from donors. But to the extent that donor assistance is in the form of loans, it will still be necessary to examine the capacity of the LDC public sector to generate over time the revenues needed to service such debt.

c. Donor policy with respect to recurrent cost financing. Donors have commonly emphasized assistance aimed at increasing the productive capacity; i.e., financing primarily the investment (set-up) costs of LDC programs that produce and deliver goods and services which address basic needs. The question is whether LDC adoption of a BHN strategy requires a modification of donor policies in the direction of increased emphasis on recurrent cost financing. If so, under what circumstances should recurrent cost financing by donors be undertaken?

C. COST ASPECTS OF THE BHN STRATEGY.

There are investment and recurrent cost aspects to implementing a BHN strategy. Investment costs reflect the value of durable assets that contribute to the production and delivery of goods and services (e.g., construct a water and sewerage supply network). Such costs do not vary with changes in output levels over the period and in this sense they are fixed costs. Recurrent costs are all non-investment costs incurred when supplementary resources are purchased and used to supply goods and services over the period. They vary with changes in the level of output and are essentially equivalent to variable costs.

However, within shorter sub-time periods some of them are fixed.

The amount of investment and recurrent costs depend on resources required to construct, maintain and operate a BHN network that is designed to serve a target population, over some time period, with goods and services of various qualities and quantities. Recurrent resource requirements and costs increase as more people are served, with larger quantities delivered through higher quality networks; e.g., water supplied through metered-household taps vs public stand-pipes. However, broader and more complex systems could reduce unit costs given potential complementarities and interdependencies among BHN items. Costs depend both on production and consumption interdependencies, and unit costs can decline as these externalities are taken into account in network designs. For example, linking the supply of fresh water, sewerage, sanitation and housing could result in economies of scale and lower unit cost. Basic health, nutrition and education offer opportunities for economical linking. Interdependencies that affect costs are also important on the demand (consumption) side. For example, reductions in gastro-intestinal diseases through water, sewerage, sanitation and health programs can increase the nutritional value gained from consuming a given quantity of food. Improved nutrition can have a positive benefit on learning and acquiring productive skills. These externalities comprise externalities which the public sector might take into account in efforts to minimize costs of achieving BHN objectives.

There have been some estimates of what it might cost to implement a basic human needs strategy on a global scale. It is estimated that

the consumption of from 0,8 to 2.0 million people fall short of minimum standards for the various goods and services shown in Table I. According to a preliminary staff analysis by the World Bank, it would require an additional 20 billion dollars in annual investment to supply the target population with adequate diets, water and sewerage, sanitation, housing and basic education. There are a number of problems with these estimates but they are offered here (and at the Bank) for illustrative purposes.

Table I. Projected Target Population of Global BHN Program  
(in billions of people)

	1975	To Year 2000	
	Estimated Population Currently Deprived	Projected Target Population in All LDCs	Target Population in the Low Income LDCs
	1975-1976		
Food	.9	2.2	1.5
Water & Sewerage	1.2	1.7	1.1
Sanitation	1.3	2.0	1.4
Health	.8	1.7	1.1
Housing	.8	1.6	1.0
Education	1.1	1.5	1.1

Table II shows an estimate of the annual recurrent cost associated with supplying goods and services over the twenty year time period (to 2000). Table III shows estimates of the ratio of recurrent to total investment cost.

Table II. Recurrent Cost of Global BHN Programs  
(in billion of U.S. dollars)

	<u>Food</u>	<u>Water and Sewerage</u>	<u>Housing</u>	<u>Health and Educa- Sanitation</u>	<u>tion</u>	<u>Total</u>
Annual Recurrent Cost	5.7	2.3	14.3	1.8	9.8	33.9
Total Recurrent Cost	113.6	45.6	286.0	36.0	195.5	678.6

Table III. Estimated Recurrent Costs for Basic Needs Strategies

(billions of 1975 US Dollars)

	<u>Low</u>	<u>Medium</u>	<u>High</u>
<u>Food</u>			
- Ratio of annual average recurrent cost to total investment cost (%)		20%	
- Annual average recurrent cost (\$bns)		5.68	
- Total recurrent cost, 1980-2000 (\$bns).		113.60	
<u>Water and Sewerage</u>			
- Ratio of annual average recurrent cost to total investment cost (%)		3.0%	
- Annual average recurrent cost (\$bns)		2.27	
- Total recurrent cost, 1980-2000 (\$bns)		45.48	
<u>Housing</u>			
- Ratio of annual average recurrent cost to total investment cost (%)	4.5%		10%
- Annual average recurrent cost (\$bns)	8.88		19.7
- Total recurrent cost, 1980-2000 (\$bns)	177.6		394.0
<u>Health</u>			
a) <u>Primary Health Care</u>			
- Ratio of annual average recurrent cost to total investment cost (%)		10%	
- Annual average recurrent cost (\$bns)	.54		.93
- Total recurrent cost, 1980-2000 (\$bns)	10.80		18.60

	<u>Low</u>	<u>Medium</u>	<u>High</u>
b) <u>Tropical Disease Control</u>			
- Ratio of annual average recurrent cost to total investment cost (%)		5.7%	
- Annual average recurrent cost (\$bns)		1.12	
- Total recurrent cost, 1980-2000 (\$bns)		22.3	
c) <u>Total Health Strategy (a &amp; b)</u>			
- Ratio of annual average recurrent cost to total investment cost (%)	6.6%		7.0%
- Annual average recurrent cost (\$bns)	1.66		2.05
- Total recurrent cost, 1980-2000 (\$bns)	33.10		40.90
<u>Education</u>			
- Ratio of annual average recurrent cost to total investment cost (%)		19.4%	
- Annual average recurrent cost (\$bns)		9.8	
- Total recurrent cost, 1980-2000 (\$bns)		195.5	
<u>Total: All Strategies</u>			
- Annual average recurrent cost (\$bns)	28.6		39.47
- Total recurrent cost, 1980-2000 (\$bns)	565.28		789.48

The estimates have an added drawback in that they are not based on detailed country analysis. BHN strategies can only be implemented at local and national levels, hence there is a need to develop cost estimates at country and local levels prior to generalizing about the resource cost and public finance implications of pursuing BHN strategies.

With respect to recurrent costs, Uma Lele has pointed out that, "At least in some cases, local participation and resource mobilization provide a means of overcoming the problems of the high recurrent costs of many social services." The problem might be overcome, or at least limited, by training and employing local manpower, e.g. "barefoot" doctors. Communal water taps might be used rather than more expensive metered connections requiring expensive maintenance and high operating costs. In addition to social service cost reductions, self-help labor might be implemented and thereby reduce recurrent costs (e.g., worker mobilization to maintain site and service housing) and improve productive capacities and could generate employment and income-earning opportunities.

Recurrent and investment costs are also dependent upon the relative weight attached to particular aspects of a BHN strategy. If increased consumption at an early date is the only goal, then the BHN network and operating procedures would have to be output-oriented. Should employment be the key target, then the network and procedures may have to be designed to maximize employment opportunities at the expense in some instances of total output. The mix of objectives that are pursued will determine the nature of the network created and the costs involved. Given any objective mix, recurrent costs will arise, and the key question is how to finance them.

D. PRICING OF PUBLIC SECTOR ACTIVITIES.

There are two sources of finance for goods and services supplied by the government sector directly or indirectly: user-charges and general fund revenues. In the case of user-charges, mainly by private suppliers but possibly public corporations, price is ordinarily set to cover average total cost (ATC). However, at such prices, consumption by the poor of such services may not occur for a variety of reasons including unfamiliarity with the goods or services and insufficient

income. In such cases partial or full subsidization might be used. Subsidies either may be from block price schedules, general fund sources, or a combination of both sources.

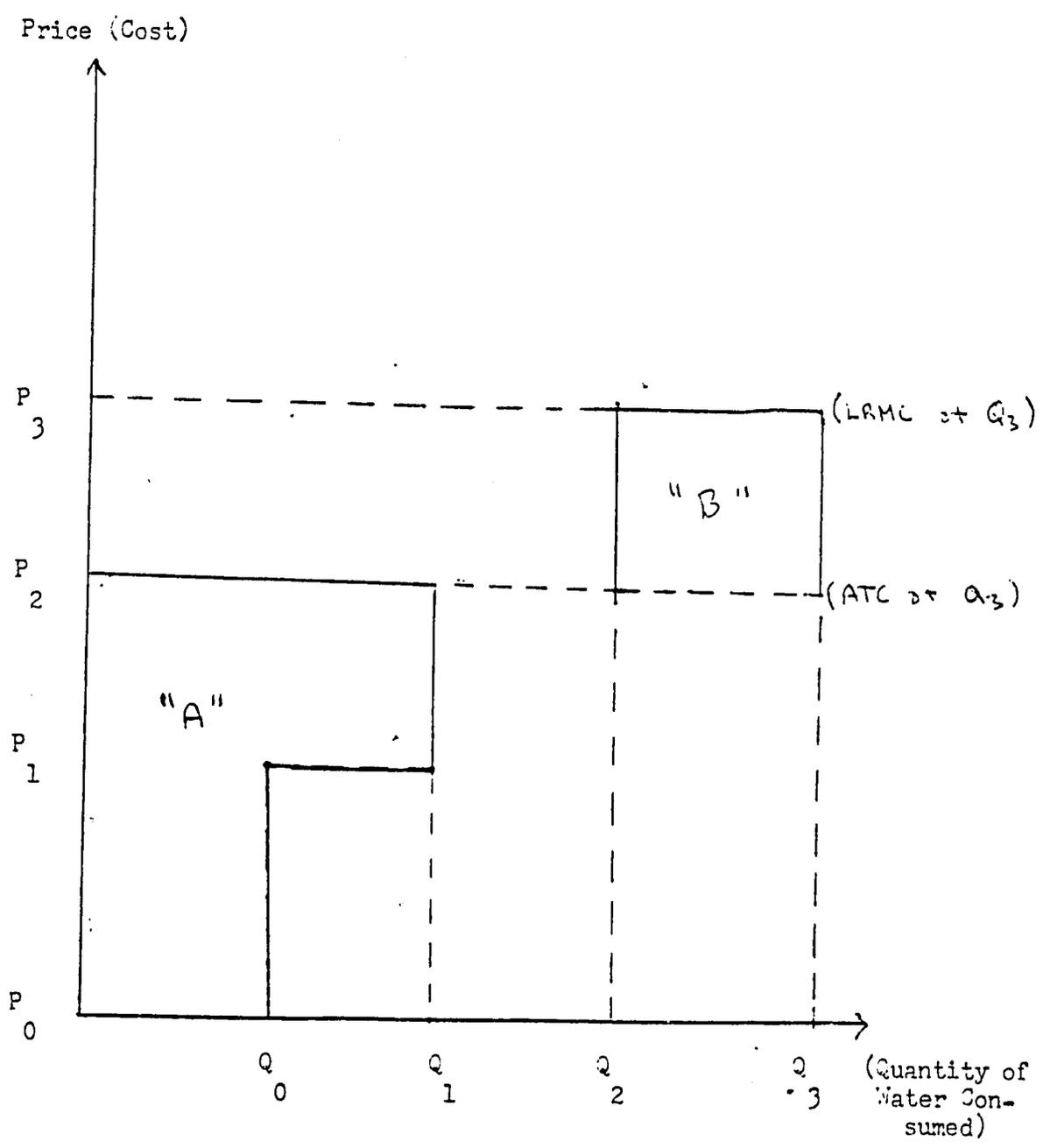
1. Block Price Scheduling.

The block price approach charges some consumers price in excess of the average total cost (ATC) of production, and others less than (ATC). The pricing technique is based on the ability to pay principle where higher income consumers are charged relatively higher prices than lower income earners, thereby subsidizing the latter group's consumption. In this way, higher consumption standards can be met by the poor and costs can be either fully or partially covered. The technique essentially involves direct transfer payments from one set of customers to another with the intermediation of the government. Figure I depicts a hypothetical block price schedule for key BHN item, water, where the poorest consumers are provided with  $Q_0$  supply at zero price through a communal tap (although it might be advisable to levy a minimal charge in order to discourage wastage). Charges are metered to consumers of  $Q_0$  to  $Q_1$  at price  $P_1$ , set below average total costs (ATC) in order to affect their consumption. Price  $P_2$  is charged to consumers of  $Q_1$  to  $Q_2$ , set to cover (ATC) on

the assumption that they are able to pay full cost -- recurrent and investment amortization. Higher price  $P_3$  is charged to consumers of  $Q_2$  to  $Q_3$ , set to exceed (ATC) on the assumption that the well-off are able (and willing) to consume at the higher price. In this hypothetical case the poorest people consume  $Q_0$  at no charge, a block price  $P_1$  is set so that  $P_1 \cdot (Q_1 - Q_0)$  is less than some target percent of average household income. The next higher tariff block is  $P_2$ , set to cover AFC for the quantity  $Q_1$  to  $Q_2$  on the assumption that  $P_2 \cdot (Q_2 - Q_1)$  is not more than some target percentage of household income. The highest tariff  $P_3$  is set to equal marginal cost (LRMC), and exceed ATC. Since water-use generally parallels income levels, it is assumed that only relatively wealthy household (and commercial-industrial) consumers are able to pay  $P_3$  for water delivered and households are willing to do so because delivery is "higher quality" service for the upper-income consumers has been imputed into AFC and LRMC.

The subsidization (area B) is used to cross-subsidize those paying less than ATC (area A). If B were equal to A (and total revenue were equal to total cost), then the price structure would provide full cost cross-subsidization. There

Figure I. Elements of a Block Price Schedule.



would be no need to seek further subsidization from a general fund. However, if A were less than B by an amount equal to total recurrent cost, some investment cost would be uncovered. Its amortization would require general fund subsidization.

There are a number of subsidized-price options potentially open to government, e.g., designing a block price structure to cover all recurrent but no investment costs, to cover a portion of recurrent cost but no investment costs, to cover all recurrent and part of investment amortization, or to cover all recurrent and amortization costs. In this scenario, B does not match A, the block price subsidization is incomplete, and the remaining costs must be covered by alternative sources if consumption standards and quantity targets are to be maintained. One alternative might be a further price increase to some consumers, setting price above  $P_3$  and LRMC. This option is limited by (a) system-design cost and (b) consumer price-elasticity response. Another option might be to turn to general fund revenues to subsidize consumers, producers or both.

## 2. General Fund Finance.

To the extent that subsidization is desired, block price subsidies do not fully cover cost, it is necessary

to use general government funding to assure adequate supplies of goods supplied by the public sector. Managing supply might also mean the use of general government funding for subsidies of goods and services produced by the private sector. These supply management requirements will determine in part the public finance expenditures required to implement a BHN strategy given consumption, production and employment targets.

On the revenue generation side, the adequacy of collections depends upon the size of the tax base and the propensity to tax. The size of the tax base, in large measure, depends upon government's ability to mobilize resources into productive and income-earning employment. In many LDCs, the low levels of per capita GNP (fifty-five LDCs had per capita GNPs of 500 dollars or less in 1976) show only part of the problem because for sixty or so percent of the combined population of these countries, per capita GNP was less than 200 dollars in that year. This condition poses significant constraints to large-scale increases in public revenues for the financing of goods and services intended to address BHN objectives. Of course, the ability to maintain a tax propensity sufficient to yield revenues adequate to finance BHN strategies depends upon a government's

commitment to a tax policy that captures publicly and privately generated increases in production and income, and the administrative efficiency with which revenues are collected. However, if the estimates discussed above are anywhere near accurate, developing countries embarking on BHN strategies have some hard choices to make. To the extent that additional revenues cannot be generated in amounts sufficient to cover the needs linked to the supply of goods and services critical to meeting BHN objectives, other spending would need to be curtailed. While a reallocation of government revenues may be appropriate, there may be circumstances in which such reallocations cannot be undertaken without compromising other legitimate objectives. It is in such circumstances that official development assistance can play a role in financing both investment and current cost including local currencies when local resources are used in preference to imports.

3. Policy Implications for Donors.

The pursuit of the BHN strategy by LDCs raises certain policy considerations for bilateral and multilateral donors. First, since the tax base in low income countries is limited, it may be necessary to extend ODA on soft terms to cover investment and recurrent costs in getting programs

off the ground and sustaining them. There are two reasons for this: first, demonstration programs or projects might be necessary to cope with institutional and attitudinal rigidities; and, second, pilot programs or projects might be necessary to transfer skills and technical know-how. Second, there may be time lags between the productivity and supply increases needed to match consumption targets. Temporary failure either to generate income sufficient to support effective demand or to generate supply sufficient to meet consumption criteria may require special assistance. If government is to subsidize consumption and/or production (e.g. in financing the costs of setting up, maintaining and operating a BHN network), official assistance could be necessary, particularly local cost support in situations using local labor and other resources. Third, since payoff periods in sectors critical to the attainment of BHN objectives tend to be longer-run (e.g., in terms of social benefits and productivity increases due to improved health and education), they may contribute to the generation of government revenues required to repay loans only after some time has passed. This suggests the need for continued high concessionality of ODA. Fourth, since in many cases BHN projects generate external social benefits rather than more easily identifiable internal economic benefits, they may not meet standard "internal rate of return" requirements

imposed by donors. Fifth, the BHN approach tends to require close policy linkages and cooperation among recipient countries and bilateral and multilateral donors.

Clearly the scope of a developing country's program could begin with a limited focus (e.g., a village water supply project); but it could also begin with a broad one (e.g., a national health program). And similar initial programs could certainly be extended over time. The broader the effort, the more important it would be to assure close collaboration among development partners in such matters as (a) network design, operation and maintenance, (b) monitoring and expanding or modifying design and operating procedures, and (c) overall economic policy issues that are likely to affect the success of particular projects or programs.

E. A SUGGESTED RESEARCH DESIGN.

The following points would serve as the basis for research on the recurrent cost aspects of supplying public sector services and their implications for public finance and official development assistance. Research would be limited to public sector activities in water and sewerage, basic health, housing, sanitation and education. It would exclude agriculture although linkages between this key BHN

element and health, education, etc., are important.

Country-specific research could begin either by (a) seeking to identify minimum standards of consumption that are necessary for the target group's well-being -- its productive survival or (b) using existing information or standards and consumption gaps and proceeding directly to with costs. The advantage of the former is that it would provide a more complete analysis and, consequently, it would be more useful for planning purposes. However, the advantages of the latter are that it would require less research time and funding, and it would not run the risk of delving too closely into what might be perceived by governments as sensitive data.

1. The Supply Side.

Country-specific research could estimate recurrent costs associated with either (a) alternative networks and their operation and maintenance, or (b) an existing network's planned or potential redesign and expansion to supply output and close consumption gaps. If the more limited research scope (b) were chosen, an estimate of alternative cost patterns could be abandoned as a primary focus of the research, and it could be conducted only as resources and research opportunities exist.

Research would estimate the productivity and employment and income-earning opportunity effects associated with redesigning and expanding the network.

2. The Demand Side.

This part of the research would link demand with supply by estimating the income required by the target group to close consumption gaps, and then by estimating the increased-income that would be earned by the group due to their more productive employment in either supplying BHN or other goods and services.

The research would determine whether there is likely to be an income shortfall requiring subsidization and, in the event one is likely, to estimate its magnitude.

The research would examine the extent to which the shortfall might be financed through a block price schedule in which subsidization of some consumers is accomplished outside the public sector transfer mechanism.

3. Public Finance and CDA.

On the expenditure side, the research would estimate amounts of income transfers to consumers, subsidization payments to producers and payments for resources directly allocated to production that would be required to finance the network's recurrent operation and maintenance over the

time period that there is expected to be an income shortfall on the demand side. While the research's expected finding is a demand shortfall, a supply shortage rather than a surplus could come about. In either case, the research would inquire into the institutional processes by which consumption gaps are closed through the management of supply and demand.

On the revenue side, research would (a) estimate the growth in the tax base and government's propensity to tax, (b) determine whether government has the necessary budgetary flexibility to finance supply and demand management without incurring serious opportunity costs, and (c) determine whether there will be a need for official development assistance, and if so, in what magnitude and kind.

The research would estimate ODA foreign exchange and local currency requirements to support the implementation of a BHN strategy without imposing serious opportunity costs.

The field research ideally should be in a country whose situation appears to be consistent with the project's preliminary design. The country selected should be one where BHN objectives are included in development planning. There is a serious government commitment to seek the accomplishment of these objectives where there is a public sector involvement

in recurrent (and investment) cost finance; where recurrent costs are covered at least in part by user-charges, and where ODA plays a role in development finance. One country meeting these requirements is Botswana, a country of manageable size, where very importantly research opportunities are not generally constrained by government policy.

Botswana offers other rather distinct advantages as a country in which to do pilot research. First, the "basic objectives of national planning" are rapid economic growth, social justice (based on policies such as changes in land tenure" aimed at achieving a more equitable distribution of income and wealth) and economic independence (through "strengthening internal production and the progressive localization of ownership and management"). Botswana's objectives are consistent with BHN objectives -- growth in output, amended composition of output and modified income distribution to favor the poor. Second, the government takes an active role in both supply and demand management. On the supply side, an accepted principle is that "government expenditures should be biased strongly towards economic and social services that benefit households of below average income." On the demand support side, it is accepted that income transfers and "direct subsidies in kind to the

poorest households, such as those implied in the primary school feeding and destitute relief programs should be maintained and supported." Third, block price schedules are imposed for certain public services where, at minimum, "services that mainly benefit higher-income households should be priced to recover their full cost." Fourth, government is sensitive to the relationship between recurrent expenditures and financing capacities noting that "recurrent expenditure growth must increase fast enough to cope with the implications of the development program yet to be consistent with the general growth of the economy." Fifth, the government's employment strategy is consistent with the BHN emphasis on improving productivity and expanding employment opportunities. Its employment strategy is "(a) to maximize the rate of job creation associated with the growth of the modern sector, and to spread such employment to the villages as well as the towns, (b) to provide increased opportunities for productive self-employment and informal sector employment, particularly in the rural areas and on the urban fringes and (c) to prevent a widening of the gap in living standards between those in formal sector jobs and those dependent on traditional agriculture." The strategy seeks "to prevent government's scarce financial

resources from being directly or indirectly pre-empted by the modern sector."

The research has the potential of adding useful information to country or locality plans to implement BHN strategies. By choosing cases where policies similar to a BHN approach have been implemented, and by examining past trends and current projections, these important relationships might be established: the linkages between supply and demand, supply and demand management, requirements, and policy implications for public finance (expenditure and revenue) and ODA (foreign-exchange and local currency loans and grants). The key is to find cases where efforts similar to BHN have been underway, where there are plans to expand them, and where there is an open research policy.

LIA/EA, BCurry:gc, 4/26/78