COMMISSION ON MACROECONOMICS AND HEALTH
A WHO commission examining the interrelations among investments in health, economic growth and poverty reduction

CMH Working Paper Series

Paper No. WG3 : 4

Title

A Synthesis Report on the Role of Communities in Resource Mobilization and Risk Sharing

Authors

A. Preker, G. Carrin, D. Dror, M. Jakab, W. Hsiao, D. Arhin-Tenkorang

The views expressed in this report are those of the authors, not the organizations for which they work

Date: August 2001

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Acknowledgements

Working Group 3 of the Commission on Macroeconomics and Health is particularly grateful the following individuals for their direct contribution to the report: (a) preparation of the synthesis report by Alexander S. Preker, Guy Carrin, David Dror, and Melitta Jakab; (b) survey of the literature by Melitta Jakab, and Chitra Krishnan; (c) analysis of macro-level data by Dr. Guy Carrin, Riadh Zeramdini, Philip Musgrove, Jean-Pierre Poullier, Nicole Valentine and Ke Xu; (d) analysis of micro level data by Melitta Jakab, Alexander Preker, Chitra Krishnan, Allison Gamble Kelly, Pia Schneider, Francois Diop, and A.K. Nandakumar; Dr. Johannes Jutting, Dr. Anil Gumber, Kent Ranson; and Dr. Siripen Supakankunti; (e) review of selected Asia and Africa experiences by Bill Hsiao and Dyna Arhin-Tenkorang; (f) review of re-insurance of community schemes by David Dror.

Valuable guidance on methodological issues was provided by Adam Wagstaff. We are also indebted to the following individuals for data access, guidance on research methodologies, reviews and other indirect contributions to the report Christian Jacquier, Christian Baeaza, Michael Cichon, Chris Murray, Kei Kawabatak, Christopher Lovelace, Helen Saxenian, Jack Langenbrunner, David Peters, George Schieber, Charlie Griffin, Agnes Soucat, Abdo S. Yazbeck, Mariam Claeson, Flavia Bustreo, Steve Cummings and Shanta Devarajan.

The authors of the report are also grateful for the access provided to parallel and ongoing research on community financing by the Bank, World Health Organization, and International Labor Organization with important inputs from Harvard University, London School of Hygiene and Tropical Medicine, University of Llyon Partnerships for Health Reform - Abt Associates Inc.(USA), National Council For Economic Research (India), Center for Development Research (ZEF) (Germany), and Chulalongkorn University Faculty of Economics (Thailand).

I. Overview and Context

This century has witnessed greater gains in health outcomes than any other time in history. These gains are partly the result of improvements in income with accompanying improvements in health-enhancing social policies (housing, clean water, sanitation systems, and nutrition) and greater gender equality in education. They result also from new knowledge about the causes, prevention, and treatment of disease, and the introduction of policies, financing, and health services that make such interventions accessible in a more equitable manner. Improving ways to finance health care and protect populations against the cost of illness has been central to this success story (see Preker et all 2001).

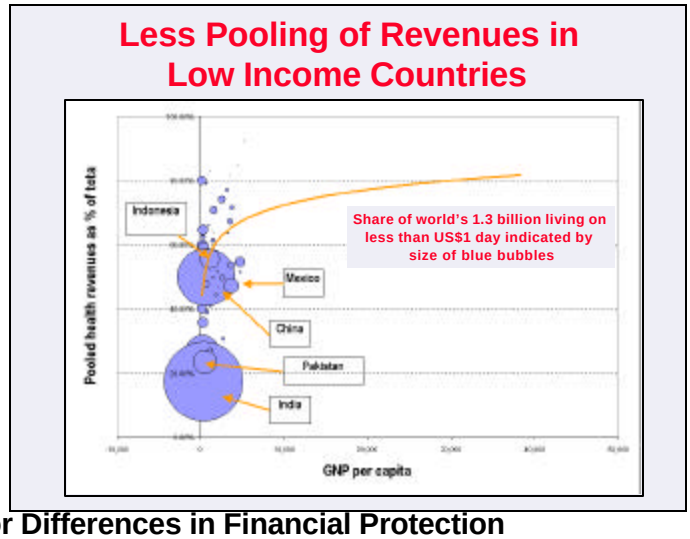
The share of the world's population protected against the catastrophic cost of illness has increased significantly during the 20th Century, with global spending on health increasing from 3 percent to 8 percent of global GDP (US$2.8 trillion) or 4 percent of the GDP of developing countries (US$250 billion) during this time-period. At the current global growth rate for GDP of 3.5 percent, spending on health-enhancing activities will increase annually by about US$98 billion a year worldwide, or US$8 billion a year in low- and middle-income countries.

The Exclusion of Low-Income Rural Populations and Informal Workers

Today, the population in most OECD countries (with the exception of Mexico, Turkey and the US) enjoy universal access to a comprehensive range of health services that are financed through a combination of general tax revenues, social insurance, private insurance, and charges.

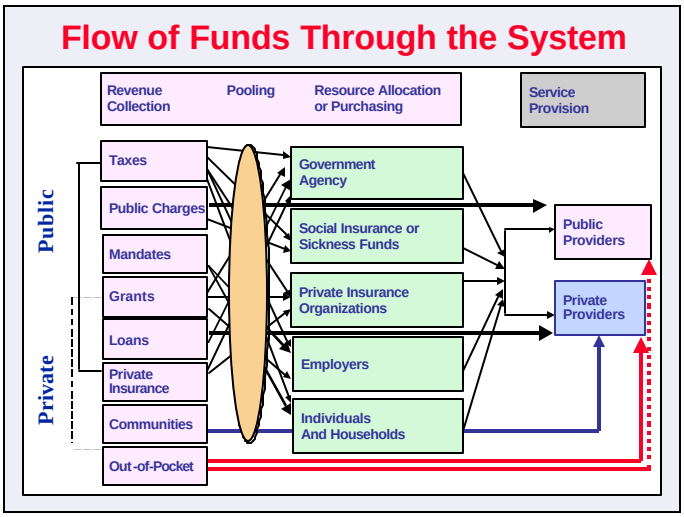
A number of low-income countries, such as Sri Lanka, Malaysia, Zambia, and Costa Rica, have tried to follow a similar path, the quest for financial protection against the cost of illness in middle- and low-income countries has been a bumpy ride. Many of the world's 1.3 billion poor still do not have access to effective and affordable drugs, surgeries and other interventions because of weaknesses in the financing and delivery of health care (World Bank 1993; 1997; WHO, 2000; ILO 1998).

Although 84 percent of the world's poor shoulder 93 percent of the global burden of disease occurs, only 11 percent of the US$2.8 trillion spent on health care reaches the low- and middle income countries. Vaccination strategies of modern health care systems have reached millions of poor. However, when ill, low-income households in rural areas continue to use home remedies, traditional healers, and local providers who are often outside the formal health system. The share of the population covered by risk sharing arrangements is lower at low income levels (see Figure 1). As a result, the rich and urban middle-classes often have better access to the modern health care advances of the 21th century.

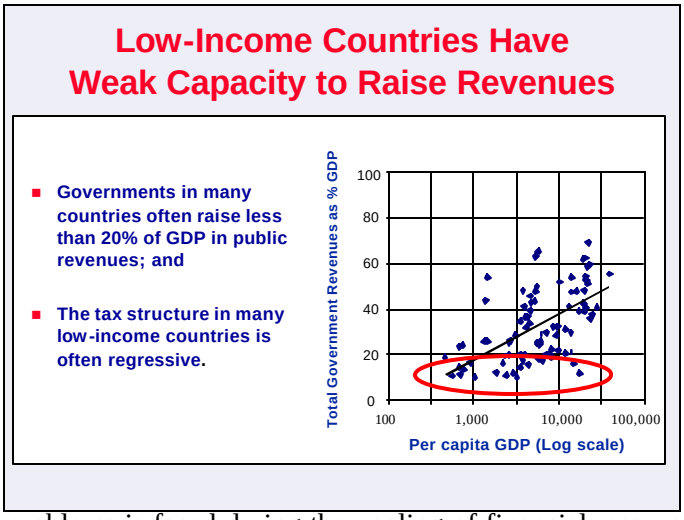


Origins of Rich-Poor Differences in Financial Protection

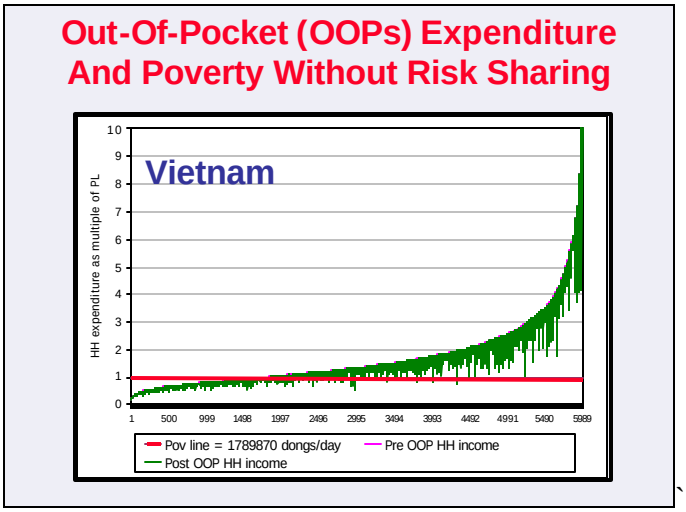
The flow of funds through the health care system and public/private mix is complex (see Figure 2 – modified from Schieber and Maeda 1997). It can be differentiated into three discrete functions: (a) the collection of revenues (source of funds); (b) the pooling of funds and spreading of risks across larger population groups; and (c) purchase of services from public and private providers of health services (allocation or use of funds) (see also WHO 2000). A combination of general taxation, social insurance, private health insurance, and limited out-of-pocket user charges has become the preferred health financing instruments for middle- and higher income countries, where income is readily identifiable and taxes or premiums can be collected at the source.



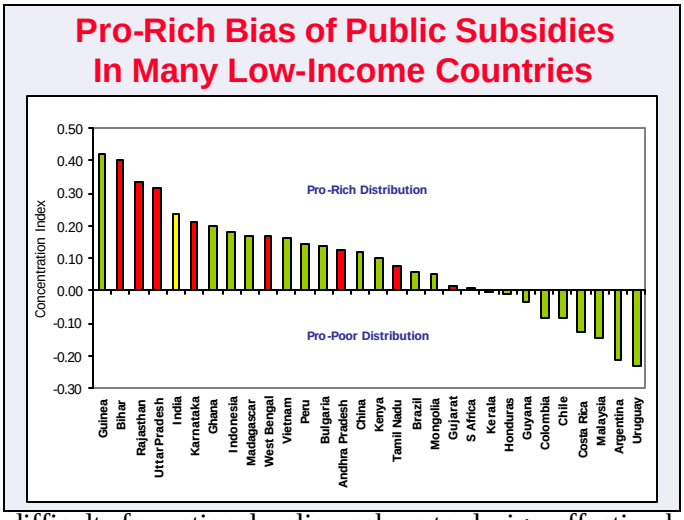
Several factors make the policy options for financing health care at low income levels different from those at higher income levels. Low income countries often have large rural and informal sector populations, limiting the taxation capacity of their governments. When a country's taxation capacity is as low as 10 percent of GDP or lower, it would take 30 percent of government revenues to meet a 3 percent of GDP health expenditure target through formal collective health care financing channels. In most countries, public expenditure on health care is much lower than this, often not surpassing 10 percent of public expenditure, hence less than 1 percent of GDP of public resources available for the health sector (see Figure 3 – modified from World Bank 1997).



A related set of problems is faced during the pooling of financial resources at low income levels. Pooling requires some transfer of resources from rich to poor, healthy to sick and gainfully employed to inactive. Tax evasion by the rich and middle-class in the informal sector is widespread in low-income countries, preventing higher income groups from contributing their share to the overall revenue pool. Without such pooling of revenues and sharing of risks, low income populations are exposed to serious financial hardship at the time of illness. Figure 4 below (Wagstaff 2001) indicates households whose income drops below the poverty line (horizontal bar indicating poverty line) due to out-of-pocket expenditure on health care (vertical drop bars on the income distribution curve). When pooling does exist, it tends to be fragmented along income levels, preventing effective cross-subsidies between higher and lower income groups. In many poor countries, local community financing schemes have emerged partially as an informal sector response to these shortcomings in revenue pooling at low income levels.



Faced with overwhelming demand and very limited resources, many low-income countries use nonspecific broad expenditure caps that push rationing and resource allocation decisions to lower levels of the provider system. This often leads to serious drug shortages, equipment breakdowns, capital stock depreciation, and lowering of standards of hygiene. Politically and ethically difficult rationing decisions about the targeting of public expenditure to the poor are also difficult in such an environment. As a result of such difficulties, the rich often benefit more from public subsidies and public expenditure than the poor (Figure 5 – Peters 2001, see also Gwatkins 2001).



It has been less difficult for national policymakers to design effective health financing schemes for individuals and households in formal employment whose income is readily identifiable and who can be taxed at the source. Unfortunately, the formal sector in most low-income countries is small, compared with populations in rural areas and informal employment. In low-income countries, large segments of the population in informal employment remain without effective collective arrangements to pay for health care or to protect them from the cost of illness (Van Ginneken 1999, Midgley 1996, World Bank 1995, Guhan 1994).

Role of Communities in Providing Financial Protection

During recent years, community initiatives have begun to bridge the large gap in social protection between people covered by formal schemes and those with no protection at all against the cost of illness. (Bennett 1997, Atim 1998, Musau 1999, Ziemek and Jutting, 2000, Jakab and Krishnan 2001).

In the literature, the term "community financing" has evolved into a generic expression that is used to cover a large variety of health financing arrangements (Stinton 1982, Rifkin 1988; Navarro 1984; Abel-Smith 1988; Muller 1983; Foster 1982, McPake 1993; Dror 1999, and Hsiao 2001). On the one hand different authors use the term 'community financing' in different ways. On the other hand, similar - more specific - terms are often used to describe similar financing arrangements. Micro-insurance, community health fund, mutual health organizations, rural health insurance, revolving drugs funds, community involvement in user fee management have all been referred to as community-based financing. Yet, each of these risk sharing arrangements have different objectives, different policy, management, organizational, and institutional characteristics, and different strengths and weaknesses.

The Oxford dictionary defines community as (a) "joint or common, ownership, tenure or liability"; (b) "common character"; (c) "social fellowship: (d) "life in association with others"; (e) "common character"; (f) "common or equal rights or rank"; and (g) "people organized into common political, municipal or social unity".

Community-based health care financing reflects most of these concepts. One common feature of the definitions is the **pre-dominant role of collective action in raising, pooling, allocating/purchasing, and/or supervising the management** of health financing arrangements, even when there is interface with government programs and services in terms of subsidies, supplemental insurance coverage, or access to public provider networks. Some community financing schemes cover common geographic entities, while others are based on professional affiliations, religion, or some other kind of joint activity. A second common feature of community financing schemes relates to the beneficiaries of these schemes which tend to be populations that have no other financial protection or access to collective financing arrangement to

cover the cost of health care. A third common feature is the voluntary nature of these schemes, and tradition of self-help and social mobilization that are embraced by the poor in many low-income countries.

II. Conceptual Underpinnings for Community-Based Action in Health Care Financing

If both markets and governments fail to provide financial protection mechanisms for the poor, what is it about community-based initiatives that makes them turn to such arrangements? The growth of community-based health financing arrangements rests on developments in three related areas (Table 1 – see Preker and Jakab 2001):

- micro-finance (micro-savings, micro-credits, micro-insurance, financial intermediation);
- social capital (community, network, institutional, and societal links); and
- mainstream theories (welfare economics, public finance, health economics, and public health).

Table 1. Conceptual Underpinnings of Community Financing Schemes

	Key Conceptual Underpinnings
Micro-finance	**1. Micro-credit**
	❑ Risk taking (take advantage of opportunity, avoid over-cautious behavior)
	❑ Current liquidity management (smooth out consumption, increase choice)
	❑ Short-term shocks (drought, famine)
	2. Micro-savings
	❑ Predictable life-cycle events (education, marriage dowry, childbirth, death)
	❑ Capital formation (purchase of equipment, down-payment on land, growth)
	❑ Future liquidity management (smooth consumption, increase choice)
	3. Micro-insurance
	❑ Long-term income support (life and disability insurance, pensions)
	❑ Short-term income support (sick pay, unemployment insurance—not well developed)
	❑ Unpredictable health expenditure (health insurance)
	❑ Replacement of loss (fire and theft insurance)
	4. Financial intermediation
	❑ Payment and money-transfer services (facilitate trade and investments)
Social capital	**1. Community links**
	❑ Between extended families, local organizations, clubs, associations, civic groups
	2. Network links
	❑ Between similar communities (horizontal) and different communities (vertical)
	3. Institutional links
	❑ To communities' political, legal, and cultural environment
	4. Societal links
	❑ Between governments and citizens through public/private partnerships and community participation
Mainstream theories	**1. Welfare of society**
	❑ Income and growth
	2. Public finance
	❑ Taxation and social insurance
	3. Social policy
	❑ Social services and safety nets
	4. Health policy
	❑ Public health priorities and health systems

Links to Existing Micro-Finance Organizations

The role of micro-finance in poverty alleviation for low-income groups has become a prominent theme in recent years (ADB 2000, Brown and Churchill 2000, Zeller 2000, Otero 1994). Poor and rich households are equally exposed to a range of events beyond their immediate control that put them at financial risk. Such events range from predictable life-cycle events such as marriage, childbirth, education, and death to less predictable events such as droughts, fire, floods, and catastrophic illness.

The difference between poor and non-poor households is the availability of mechanisms to cope with the financial consequences of unpredictable events. Non-poor households take advantage of a wide range of risk-protection mechanisms that are available even in the lowest income countries. This includes savings, access to credit, insurance, and other financial intermediation mechanisms.

Until recently, few risk-protection mechanisms were accessible to the poor. It was assumed that the poor—living on less than a dollar a day — were neither willing nor able to save or contribute to insurance against the risks they faced. In sum, the poor were thought to be "unbankable" and "uninsurable" (Zeller and Sharma 2000). This led to the growth of informal risk-protection mechanisms through families, friends, and community networks. However, the past decade has witnessed a steady expansion of successful initiatives to provide the poor with savings, credit, and insurance services. Growing experience with these mechanisms suggests that the poor can be creditworthy, can save, and can buy insurance.

In particular, four micro-finance instruments have been developed to improve the productive needs of low-income households. They are: (a) micro-credits that help improve the immediate human, physical, and social capital of the poor (e.g., small short-term loans to help pay for training, a piece of farm equipment, and access to social networks); (b) savings to be used to build up the medium-term capital of the poor such as education, the down payment on a piece of land and dowry for marriage of a daughter into a good family; (c) insurance to stave off the unpredictable expenses such as theft, loss, and illness); and (d) financial intermediation (payment systems to facilitate trade and investments).

Life, casualty, and crop insurance is often used to secure loans for low-income populations. Micro-finance instruments help the poor avoid having to invest in less cost-efficient means of savings, credit and insurance such as jewelry, livestock, and staple food, or to resort to inefficient barter systems of payment (payment in-kind). And these instruments contribute to the early transformation of barter transactions into more formal economic exchange and formalization of property rights.

The extension of such techniques to the health sector is now being observed in many micro-finance and development organizations in low-income countries, especially in the case of micro-insurance (Dror and Jacquier 2000, Brown and Churchill 2000, ILO 2000). Extending micro-insurance techniques to health care presents a unique set of challenges under exploration. While life and crop insurance deals mainly with the financial cost of income loss, health insurance presents an additional set of issues related to financing tangible services for which the cost is neither fully predictable nor constant. This includes the range and severity of different illnesses, the range and scope of services provided, and the behavior of both patients and providers (the latter influenced particularly by the payment mechanism due to moral hazard, adverse selection, and fraud, especially in the form of supplier-induced demand).

Links to Community Level Social Capital

Why have micro-finance organizations been able to reach low-income individuals and households while more formal national systems continue to fail to do so? Clues to answer this question come from the social capital literature of the 1990s, which can be summed up as "it is not what you know, but whom you know" that counts (Platteau 1994, Woolcock 1998, Woolcock 2000). When hard times strike, it is often family and friends that constitute the ultimate safety net for low-income groups.

Evidence suggests that social capital has four dimensions with both potential positive and negative impacts on development. The four dimensions include:

- community links such as extended families, local organizations, clubs, associations, and civic groups—people in small communities helping each other (Dordick 1997)
- network links between similar communities (horizontal) and between different communities (vertical) such as ethnic groups, religious groups, class structures, gender etc. (Granofetter 1973)
- institutional links such as communities' political, legal and cultural environment (North 1990)
- societal links between governments and their citizens through complementarity and embeddedness such as public/private partnerships and the legal framework that protects the rights of association (e.g.

chambers of commerce and business groups) and community participation in public organizations (e.g., community members on city councils and hospital boards) (Evans 1992, 1995, 1996).

Low-income households are likely to have more trust in micro-health insurance programs that are linked to the community credit, savings, and insurance organizations to which they already belong and feel they have some control over. And, they often regard national systems as impersonal and distant from which they will never benefit. This view is reinforced when the national programs ration care to focus on "global" public health priorities that—although they may have large externalities and benefits to society as a whole—often do not respond to the immediate, day-to-day health care needs of the poor.

But such social capital has both benefits and costs. The downside of social capital occurs when communities and networks become isolated or parochial or work at cross-purposes to societal collective interests (e.g., ghettos, gangs, cartels). Inter-community ties or bridges are needed to overcome the tendency of communities and networks to pursue narrow, sectarian interests that may run counter to broader societal goals. (Narayan 1999) Community financing schemes are vulnerable to a number of these shortcomings associated with social capital:

- Community-financing schemes that share risk only among the poor will deprive its members of much needed cross-subsides from higher income groups.
- Community-financing schemes that remain isolated and small deprive its members of the benefits of spreading risks across a broader population.
- Community-financing schemes that are disconnected from the broader referral system and health networks deprive their members of the more comprehensive range of care available through the formal health care system.

Links to Mainstream Public Economics

Community-financing schemes—in addition to their links to micro-finance and social capital—benefit from interconnectivity to the overall welfare of the society in which they exist, the system of public financing (no matter how weak it may be), and the broader social policy underpinning the prevailing national health system. Schemes that build such connections at an early stage are better able to evolve in terms of expanding the number of members covered, level of resources mobilized, size of the risk pool, and range of benefits they can cover as the local community they serve grows and evolves. Their members have more to gain through such connectivity than they would through isolation.

Principal-agent problems also explain why community-based initiatives are expected to be more successful than purely market-based institutions at providing financial protection products. These can be overcome in two ways: (a) designing incentives that align the interest of the agent (insurer) with that of the principle (member), and (b) designing monitoring systems that allow the principal (member) to effectively observe the actions of the agent (insurer). The proximity of community schemes (agents) to their members (principals) allows effective monitoring, which is much more difficult at the national level.

Proponents of linkage between community involvement and public finance argue their case on both philosophical and technical grounds. In most societies, care for the sick and disabled is considered an expression of humanitarian and philosophical aspirations. But one does not have to resort to moral principles or arguments about the welfare state to justify collective intervention in health. The past century is rich in examples of how the private sector and market forces alone failed to secure efficiency and equity in the health sector. There is ample justification for such an engagement on both theoretical and practical grounds.

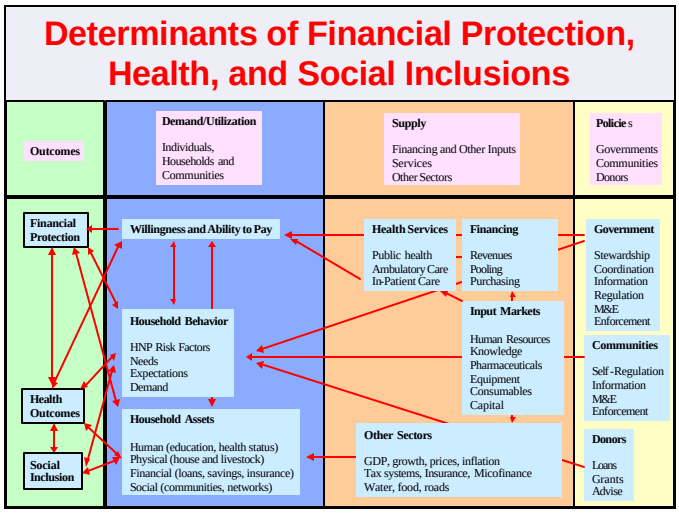
In the case of *efficiency*, there is ample evidence of the significant market failure that exists in the health sector (information asymmetries; public goods; positive and negative externalities; distorting or monopolistic market power of many providers and producers; absence of functioning markets in some areas; and frequent occurrence of high transaction costs (Bator 1958; Arrow 1963; Atkinson and Stiglitz 1980; Evans 1984; and Musgrave and Musgrave 1984). In the case of *equity*, there is equally good evidence that individuals and families often fail to protect themselves adequately against the risks of illness and disability on a voluntary basis (Barer et al 1998; and van Doorslaer et al 1993)

III. Methodology for Assessing Impact, Strengths and Weaknesses

For the purpose of assessing the impact, strengths and weaknesses of community-based involvement in health care financing we will use a modified version of the Bank's Poverty Reduction Strategy Paper (PRSP) framework (Claeson et. al. 2001). According to this framework, community financing can be seen as having three independent objectives: (a) it mobilizes financial resources to promote better health and to diagnose, prevent, and treat known illness; and (b) it protects individuals and households against direct financial cost of illness when channeled through risk-sharing mechanisms; and (c) it gives the poor a voice in their own destiny and an makes them active participants in breaking out of the social exclusion in which they are often trapped. We will not deal with the indirect impact of illness on loss of income due to interruption in employment although this is clearly another important dimension of financial protection against the cost of illness.

This framework is consistent with the three goals of health systems that were emphasized by the World Health Report 2000 (WHO 2000): financial fairness (an indicator that measureds inequality of the financial contribution for health across households) ; disability adjusted life expectancy or DALEs (an indicator that combines life-expectancy and disability measures); and responsiveness (a consumer satisfaction indicator that combines ethical and consumer quality dimensions). This framework is also consistent with the International Development Goals (IDGs) relating to achievement of better health and protection against impoverishment by the year 2015.

The determinants of financial protection, improved health, and social inclusion are complex. The PRSP framework emphasizes the following causal links: (a) close tracking of key outcome measures relating to improved financial protection, health, and social inclusion: (b) demand and utilization patterns; (c) supply in the health system and related sectors; and (d) policy actions by governments, civil society, the private sector and donors.



- **Outcome indicators** . Much work is still needed in developing a meaningful set of indicators for improving health, protection against impoverishment , and combating social exclusion. For the purpose of this report we have used both the financial fairness, DALE, and responsiveness indicators recommended by WHO and a several intermediate indicators (see next section for details).

- **Demand and Utilization in Influencing Financial Protection**. There is a complex interplay between household assets (human, physical, financial and social assets), household behavior (risk factors, needs and expectation for services), ability and willingness to pay and the availability of insurance or subsidies. This part of the analysis emphasizes the importance of household and community behavior in improving health and in reducing the financial risks.

- **Supply in Health System and Related Sector**: There is a hierarchy of interest from non-health sector factors in improving financial protection – such as GDP, prices, inflation, availability of insurance markets, effective tax systems, credit, and savings programs etc. – to more traditional parts of the health system (a) preventive and curative health services; (b) health financing; (c) input markets; and (d) access to effective and quality health services (preventive, ambulatory and in-patient).

- **Policy Actions by Governments, Civil Society and the Private Sector**: Finally, governments have a variety of policy instruments that can be used to strengthen the health system, the financing of services, and the regulatory environment within which the system functions. This includes ensuring that information is available, regulation, contracting, subsidies and direct public production. In countries with weak government capacity, civil society and donors can be encouraged to play a similar role.

Four levels of analysis were used to assess the impact, strengths, and weaknesses of community involvement in financial protection against the cost of illness and improved health. This includes: (a) survey of the existing literature of the impact, strengths, and weakness of different types of community involvement in health financing; (b) macro-level cross-country analysis of the impact of different health care financing mechanisms on national health systems performance indicators – health, financial fairness, and responsiveness; (c) micro-level household data analysis of the specific impact of community financing schemes on overall welfare of the poor – financial protection and access to health services for the poor; (d) regional reviews of the Asia and Africa experience of community involvement in health care financing, including of different public policy options such as subsidies, re-insurance, linkages to formal public financing systems, and management capacity building.

Methodology for Survey of Literature on Community Financing

Despite the recent growth in research on community-based health care financing, there is a paucity of systematic evidence regarding the performance of these schemes in terms of their impact on broad outcome goals such as health, protection against impoverishment, and combating social exclusion. In particular, little is known about their: (a) effectiveness in mobilizing resources and improving access to effective and quality health care; (b) role in sharing risks across population groups; and (c) impact on addressing the problems associated with social exclusion. And although progress made through the World Health Report 2000 considerable debate exists among experts on the indicators that best capture progress towards achieving these goals.

The review looked at any past studies whose main focus had been to examine community involvement in health care financing. Based on this broad criteria, 43 past studies were include

in the review. The selected papers included articles published in peer-reviewed journals, reports published in formal publication series of international organizations (e.g. WHO, ILO, UNICEF), internal unpublished documents of international organizations and academic institutions, and conference proceedings. Table 2 presents the breakdown of the reviewed studies according to publication type.

Of these 43 studies, five were conceptual papers, seven were large scale comparative papers (analyzing 5 or more community-based health financing schemes) and the remaining 31 were case-studies. The regional breakdown of the case-studies was 15 in Africa, 11 in Asia and 4 in Latin America. Language barriers and time constraints created a certain selection bias - Spanish literature was not included in our search while French literature was (see Jakab and Krishnan 2001)

Table 2. Summary statistic of the literature reviewed by publication type

	Peer reviewed journal article	Published report	Internal document of International Organizations or Academic Institutions	Conference proceeding
Number of studies	20	15	4	4

Assessment of Performance Since past research of community financing schemes vary considerably both in the issues examined and methodologies used, a standard set of questions were asked relating to both the review of impact assessments and review of determinants (key strengths and weaknesses of various types of schemes). The following three questions were asked relating to the impact of community involvement on health, financial protection and social inclusion.

> *Question 1*: What and how robust was the evidence on the amount of resources that could be mobilized through community involvement to pay for health care and the sustainability of this source of financing?
>
> Question 2: What and how robust was the evidence on the effectiveness of community involvement in protecting individuals against the impoverishing effects of illness?
>
> *Question 3*: What and how robust was the evidence on the role that community involvement played in combating social exclusion by allowing low-income groups to have a more direct role in the financing of their health care needs and protecting them against the financial burden of illness?

A number of studies offered conclusions on resource mobilization, financial protection and social exclusion based on the experience of authors or review of other studies but did not provide actual evidence in support of their conclusions. In the case of the performance assessments, the review excluded these studies from the analysis. The review also excluded studies that did not use controls from the performance evaluation. This approach yielded 11 studies for the performance assessment of the review.

Assessment of Institutional Determinants of Performance. The direct and indirect determinants of improved health, financial protection against the cost of illness, and social inclusion are complex. As described earlier by the PRSP framework, policy actions by governments, civil society and the private sector are mediated though supply and demand factors related to both the health sector and other sectors that impact on the outcome measures that are being examined. This would include indicators of the

service delivery system (product markets), input generation (factor markets), the stewardship or government oversight function (policymaking, coordination, regulation, monitoring, evaluation etc) and market pressures. The current body of literature discussing community financing is not that comprehensive so the report looked only at factors relating to directly to health care financing.

The following table provides a list of the core technical design, management, organizational, and institutional characteristics related to health care financing in general (see Table 3). Based on this framework, the study reviewed 43 assessments of community financing schemes for their impact, strengths and weaknesses Suggestion: for the reader who will not turn to the background papers or referenced paper, perhaps a line here or later about the difference between 'organisation' and 'institution' would be helpful. (adapted from Preker 2001).

Table 3. Core Characteristics of the Community-Based Financing Schemes

	Key Policy Questions
Technical design characteristics	• **Revenue-collection mechanisms** ❑ Level of prepayment compared with direct out-of-pocket spending ❑ Extent to which contributions are compulsory compared with voluntary ❑ Degree of progressivity of contributions ❑ Subsidies for the poor and buffer against external shocks • **Arrangements for pooling revenues and sharing risks** ❑ Size ❑ Number ❑ Redistribution from rich to poor, healthy to sick, and gainfully employed to inactive • **Purchasing and resource allocation** ❑ Demand (for whom to buy)? ❑ Supply (what to buy, in which form, and what to exclude?) ❑ Prices and incentive regime (at what price and how to pay?)
Management characteristics	• **Staff** ❑ Leadership ❑ Capacity (management skills) • **Culture** ❑ Management style (top down or consensual?) ❑ Structure (flat or hierarchical?) • **Access to information** ❑ Financial, resources, health information, behavior
Organizational characteristics	❑ Organizational forms (extent of economies of scale and scope, and contractual relationships?) ❑ Incentive regime (extent of decision rights, market exposure, financial responsibility, accountability, and coverage of social functions?) ❑ Linkages (extent of horizontal and vertical integration or fragmentation?)
Institutional characteristics	❑ Stewardship (who controls strategic and operational decisions, regulations?) ❑ Governance (what are the ownership arrangements?) ❑ Insurance markets (rules on revenue collection, pooling, and transfer of funds?) ❑ Factor and product markets (from whom to buy, at what price, and how much?)
	  
Outcome Indicators	Health Protection Against Impoverishment Social Inclusion

Methodology for Regional Reviews of Selected Asia and Africa Experience

The main objective of the reviews of selected Asia and Africa experiences was to provide additional insights about several key issues from the perspective of the two regions of the world that carry the heaviest burden of mortality and morbidity, that have the weakest risk sharing arrangements to protect its populations against the impoverishing effects of illness, and that have the greatest number of poor living in absolute poverty and social exclusion (Hsiao 2000 and Arhin-Tenkorang 2001). The addition to contributing to an understanding about the current roles of community involvement in health care financing, the regional reviews also focused on future policy options. Key questions asked include the following:

- Using the same framework described under the survey of the literature, what are the main characteristics of existing community involvement in financing health care in the Africa and Asia regions in terms of impact, strengths and weaknesses of existing schemes (describe successful and unsuccessful features)?
- To what extent are community financing schemes serving the objective of securing adequate levels, equitable and sustainable financing for the low income and rural populations served (impact on the poor)?
- What are the main challenges and obstacles to improving community financing arrangements capacity to adequate levels, equitable, and sustainable financing?
- Are there other viable alternatives to community financing in the country settings where they exist today?
- In the context of these findings of the study, role could the international donor community play to improve financing for rural and other low income population groups?.

Methodology for Micro-Level Household Survey Analysis

The aim of the micro-level household survey analysis was to shed light on two questions (Jakab et al 2001): (i) what characteristics affect the decision of households to join community based pre-payment schemes; and (ii) do community health financing schemes provide financial protection for their members against the cost of illness.

Eleven household budget surveys, four Living Standard Measurement Surveys (LSMS) and nine Demographic and Health Surveys (DHS) were screened for community financing data. Most of these surveys did not allow an identification of households with access to community based health financing. From 11 smaller scale non-standardized surveys were identified that matched the requirements for the core list of variables, five were available for further analysis and included in this report. Table 4 summarizes the key characteristics of these surveys. The remaining six were either not access for further analysis (four), data collection incomplete (one), or authors were not available to collaborate (one).

Table 4. Characteristics of 5 survey instruments

	Name of scheme	Year of data collection	Sample size (Households)	Organization associated with the survey
Rwanda	54 pre-payment schemes in 3 districts of Kabutare, Byumba and Kabgayi	2000	2,518	Partnerships for Health Reform (PHR) in collaboration with National Population Office
Senegal	3 Mutual Health Insurance Schemes	2000	346	Institute of Health and Development, Dakar in

	(Thiés Region)			collaboration with ILO
India (1)	Self-employed Women's Association (SEWA)	1998-99	1,200	National Council of Applied Economic Research (NCAER)
India (2)	Self-employed Women's Association (SEWA)		1,200	London School of Hygiene and Tropical Medicine
Thailand	Voluntary Health Card Scheme (HCP)	1994-95	1,005	National Statistics Office

The five household surveys identified and accessible for analysis for the purposes of this report represent non-standardised relatively small scale data-collection efforts with a sample size of 346 to 1,200 households. None of the surveys were nationally representative but they were a random sample of the local population. With the exception of Thailand, four surveys are very recent.

Determinants of inclusion. To assess the determinants of social inclusion in community financing schemes, we assume that the choice of whether to enroll is influenced by two main determinants: (i) individual and household characteristics and (ii) community characteristics. Individual and household characteristics influence the cost and the benefit calculation of the rational individual decision maker.

This choice, however, is moderated through certain social characteristics of the community. The individual rational choice model of weighting costs and benefits of joining a pre-payment scheme is altered by the social values and ethic of the local culture. For example, two individuals with similar individual and household characteristics (e.g. income, household size, assets, education level, health status, etc) may decide differently about joining or not joining a pre-payment scheme depending on encouragement from community leaders, availability of information, ease of maneuvering unknown processes, etc.

To estimate the weight of these determinants, a binary logit model was applied to 4 of the data-sets and a binary probit was applied to the Senegal data-set. The model can be formally written as follows.

$$Prob\ (membership>0) = X_1 \hat{a}_1 + X_2 \hat{a}_2 + \hat{a} \qquad (1)$$

The independent variable takes on a value of 1 if the individual is member of a community financing scheme and 0 if s/he is not. X_1 represents a set of independent variables that are characteristics of the individual and the household such as income, gender, age, marker on chronic illness or disability. X_2 represents a set of independent variables that approximate the social values in the communities: religion, marker on various communities where appropriate. Other variables specific to the surveys as well as interaction terms were included where appropriate. $\hat{a}_1$ and $\hat{a}_2$ are vectors of coefficient estimates and $\hat{a}$ is the error term.

The two variables of primary interest are income (measure of social inclusion) and a marker for community factors (dummy variable). Control variables also included gender, age, disability or chronic illness, religion, distance to the health center under the scheme. Some of these variables are important to control for the different probability of health care use (e.g. age, health status, distance from provider) These variables also allow us to test the presence and importance of adverse selection that all voluntary pre-payment schemes are subject to. Others variables included control for the different individual and household attitudes towards investment in health at a time when illness is not necessarily present (e.g. gender, religion). Literature has shown that

distance gradient to the hospitals and local health centers and existence of outreach programs impact on the decision to purchase membership to the scheme.

Determinants of Financial Protection. To empirically assess the impact of scheme membership on financial protection, a two-part model was used.[1] The first part of the model analyses the determinants of using health care services. The second part of the model analyses the determinants of health care expenditures for those who reported any health care use.

There are several reasons for taking this approach. First, using health expenditure alone as a predictor of financial protection does not allow to capture the lack of financial protection for those who choose not to seek health care because they cannot afford it. As the first part of the model assesses the determinants of utilization, this approach allows to see whether membership in community financing reduces barriers to accessing health care services. Second, the distribution of health expenditures is typically not a normal distribution. There is a large number of non-spenders who do not use health care in the recall period. The distribution also has a long tail due to the small number of very high spenders. To address the first cause of non-normality, the study restricted the analysis of health expenditures to those who report any health care use. As the first part of model assesses determinants of use, we will still be able to look into whether scheme membership removes barriers to care. To address the second part of non-normality, a log-linear model specification is used.

Part one of the model is a binary logit model for the Rwanda, Thailand, India data-sets and a probit model in the Senegal model. The model estimates the probability of an individual of visiting a health care provider. Formally, part one of the model can be written as follows:

$$Prob\ (visit>0) = X\hat{a} + \mathring{a} \qquad (2)$$

Part two is a log-linear model that estimates the incurred level of out-of-pocket expenditures, conditioned on positive use of health care services. Formally, part two of the model can be written as follows:

$$Log(out\text{-}of\text{-}pocket\ expenditure \mid visit>0) = X\tilde{a} + \grave{\imath} \qquad (3)$$

where X represents a set of individual and household characteristics that are hypothesized to affect individual patterns of utilization and expenditures.

$\hat{a}$ and $\tilde{a}$ are vectors of coefficient estimates of the respective models. $\mathring{a}$ and $\grave{\imath}$ are error terms**.**

The two variables of primary interest are scheme membership status and income: (a) scheme membership status; and (b) income. Other control variables were also included in the estimation model to control for the differences in need for health care (e.g. age, gender);

[1] This model is similar to the 2-part demand model developed as part of the Rand Health Insurance experiment to estimate demand for health care services. See Duan N, Manning WG JR, Morris CM and Newhouse JP. A Comparison of Alternative Models for the Demand for Medical Care, report R-2754-HHS. The Rand Corporation: Santa Monica, California, 1982. Manning, W.G. et al., Health Insurance and the Demand for Medical Care: Evidence from a Randomized Experiment. *American Economic Review* 1987; **77(3):** 251-277. For a recent application of the model that analyses the access impact of school health insurance in Egypt, see Yip, W. and P. Berman 2001. "Targeted Health Insurance in a Low Income Country and Its Impact on Access and Equity in Access: Egypt's School Health Insurance". *Health Economics*. **10(2)**

differences in preferences towards seeking health care (e.g. gender, religion); and differences in the cost (direct and indirect) of seeking health care (e.g. distance).

Methodology for Macro-Level Cross Country Analysis

For the dependent variables of the macro-level country analysis, the study used the standard indicators proposed by WHO for health systems performance (WHO 2000). These are the disability adjusted life expectancy (DALE), the index of level of responsiveness (IR), the index of fairness of financial contribution (IFFC), the index of distribution of responsiveness (IRD) and the index of equality of child survival (IECS). Only the observed data for these indicators were included in the analysis.

For the independent variables of the macro-level analysis countries were divided into three groups based on the degree to which they provided risk sharing arrangements. . We assign countries to the *advanced risk-sharing* category when they have either a social health insurance scheme or a health financing scheme based on general taxation, and when these two schemes are associated with the principle of universal coverage. Secondly, there are countries with no explicit reference to overall coverage of the population. They usually have mixed health financing systems, with some part of the population partially covered via general taxation, and specific population groups covered by health insurance schemes. These countries will be associated with *medium risk-sharing.* Finally, there are countries with general taxation systems but that incompletely cover the population; these will associated with *low-risk sharing*. This classification allows us now to define the two main organisational dummy variables: DARS = 1 when a country belongs to the set of advanced risk-sharing systems and 0 otherwise; DMRS=1 when a country belongs to the set of medium risk-sharing systems and 0 otherwise.

The methodology for this analysis is described by Carrin et al. 2001. The objective of the analysis is to examine the degree to which risk-sharing has a beneficial impact on the five indicators of health systems performance.

The analysis used the following specification for the impact of risk sharing on the level of health:

$$\text{Ln}\,(80 - \text{DALE}) = a_1 + b_1\,\text{Ln HEC} + c_1\,\text{Ln EDU} + d_1\,\text{DARS} \qquad (1)$$

HEC refers to the health expenditure per capita (in US$). EDU refers to the educational attainment in society, and is measured by the primary enrolment. The dependent variable is the logarithm of the difference between the observed DALE and a maximum. Several alternative models were also tested. The hypothesis is that advanced risk-sharing (among indirect determinants such as education) is associated with a better definition of the benefit package of health services to which citizens are entitled which translates into increased overall level of health.

The analysis used two alternative functional forms to assess the impact of risk sharing on responsiveness;

$$\text{Ln}\,[\text{IR}/(1-\text{IR}] = a_{21} + b_{21}\,\text{HEC} + c_{21}\,\text{EDU} + d_{21}\,\text{DARS} \qquad (2a)$$

and

$$\text{Ln}\,(1 - \text{IR}) = a_{22} + b_{22}\,\text{Ln HEC} + c_{22}\,\text{Ln EDU} + d_{22}\,\text{DARS} \qquad (2b)$$

The hypothesis to be tested is that advanced risk-sharing systems are associated with a larger degree of stewardship. The latter in turn is likely to positively influence the mechanisms and incentives that entail a greater responsiveness.

The analysis used three measures for distributional impact. This included: an index of equality of child survival (IECS), an index of fairness of financial contribution (IFFC), and an index of distribution of responsiveness (IRD).

Several models were tested. A model was developed that examined the impact of the dummy variable (DARS) on the distributional variables for health, fairness and responsiveness. We have adopted the same functional forms as in equations 2a and 2b:

$$\text{Ln}\,[I_j/(1- I_j)] = a_{31} + b_{31}\,\text{DARS} \qquad (3a)$$

and

$$\text{Ln}\,(1 - I_j) = a_{32} + b_{32}\,\text{DARS} \qquad (3b)$$

where I_j (j=1,…,3) refers to the three above-mentioned indices, respectively.

The effect of DARS on the indicator of *fair financing* is expected to be positive when using the logit form of the equation. The hypothesis to be tested is that in countries with advanced risk-sharing, more so than in other systems, people pay financial contributions according to their capacity to pay. This would be associated with a higher IFFC. Second, systems with universal coverage generally pay more attention to the objective of equal treatment for equal need. It is therefore assumed that such systems also respond to people's expectations as to the non-medical aspects of health care in a more equal way. Hence, the effect of DARS on the distribution of *responsiveness* is anticipated to be positive as well. Third, it is assumed that universal coverage systems are more likely to provide people with a similar benefit package than in other systems, irrespective of their socio-economic background, with a resulting positive impact on the distributional aspects of *child health*.

III. Discussion on Main Findings From Background Reviews

Discussion of Survey of Existing Literature on Community Health Financing

Based on a review of 43 papers discussing community based health care financing, the first and foremost conclusion is that there is a paucity of systematic empirical work regarding the performance of these financing mechanisms or the determinants of good outcomes in achieving good health (Jakab et al. 2001).

Although several authors have tired to create a typology for community based schemes (Bennetalet et al 1997, Atim 1998, Criel 1999, and Hsiao 2001), the possibilities for variations is almost limitless, given the great diversity in objectives, design, context and implementation arrangements. Nevertheless, the review revealed four commonly encountered and well identifiable types of schemes. The first type is one in which resource mobilization relies mainly on out-of-pocket payments at the point of contact with providers but in which the community is actively involved in the design of these fees, and managing the collection, pooling and allocation of the funds that are mobilized in this way (*community cost-sharing*). The second type is one in which the community collects payments in advance of treatment (*pre-payment*) and then manages these resources in paying for providers (*community pre-payment or mutual health organization*). The third type is one in which providers that serve a particular community collect the pre-payments themselves (*community provider-based health insurance*). The fourth type is one in which the community acts as "agents" in reaching rural and exclude populations on behalf of the formal government or social health insurance system (government or social insurance) via contracts or agreements.

Table 5 summarizes these four types of community-based financing schemes based on their core design features, management, organizational and institutional characteristics.

Table 5. Types of Community-Based Financing

Type of Scheme	Government schemes: social-insurance and tax-based	Four Community Based Finance Modalities				Direct user fees (spot market)
		Type 4 Linked community health fund, revolving fund, or prepayment	**Type 3** Community provider-based health insurance	**Type 2** Community-based pre-payment schemes	**Type 1** Community managed user fees	

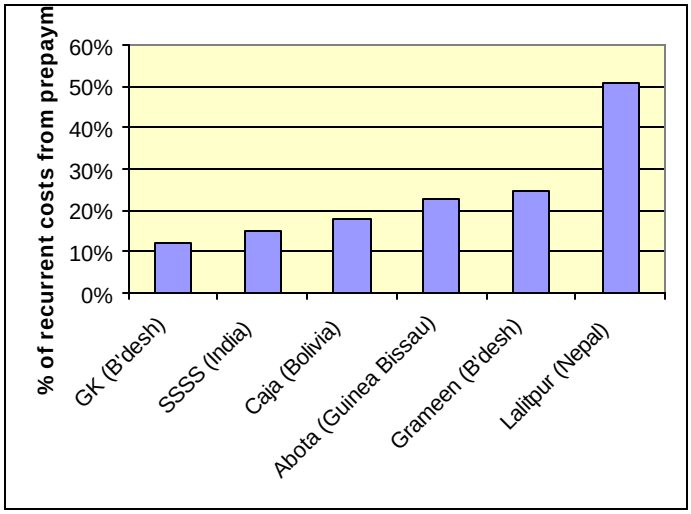
Assessment of Impact

Following the framework presented in Table 3, the survey of the literature looked at three indicators of performance of community-based financing schemes (Jakab et al 2001): (a) their effectiveness in mobilizing resources and improving access to effective and quality health care; (b) their role in sharing risks across population groups; and (c) their impact on addressing the problems associated with social exclusion (see Table 5). This is followed by a discussion on the key conclusions from the performance review of the literature.

Table 6. Number of Studies That Examined Each Core Health Financing Sub-Functions

Financing Function	Revenue Collection	Pooling of revenues	Resource Allocation or Purchasing
Type 1	5	2	3
Type 2	6	4	9
Type 3	2	2	3
Type 4	3	3	2
Multiple	10	2	3

Resource Mobilization. There is good evidence from the literature that community financing arrangements make a positive contribution to the financing of health care at low income levels, thereby improving access to drugs, primary care and even to more advanced hospital care (Dave 1991). Such community involvement allowed rural and low-income populations to mobilize more resources to pay for health care than would have been available without this involvement (McPake 1993, Diop 1995, and Soucat 1997). But there are great variations in the level of resource that can be mobilized in this manner, constrained largely by the low income of the contributing population (Hsiao 2001, Jutting 2000, Atim 1998 and Bennett 1998 – See Box 1). This is particularly true when most of the members of the community schemes are already below the poverty line. None of the studies reviewed reported the share of aggregate national resources that were mobilized through community financing arrangements. There is an urgent need to strengthen the evidence base of community financing arrangements through more rigorous registration, monitoring and evaluation of the resource mobilization capacity of these schemes.



Box 1. Revenue Mobilization

Based on data from Bennett et al (1998), this graph shows the cost recovery from prepayment of 6 Modality II schemes. The range is from 12% to 51% of recurrent expenditure. This shows that for these schemes, the resources collected contribute significantly to but do not cover the full recurrent costs thereby necessitating other sources of funding, such as out-of-

Financial protection. Where household survey data has been analyzed, a consistent observation was that community based health financing has been effective in reaching more low-income populations who would otherwise have no financial protection against the cost of illness (Litvack and Bodart 1992). Improved financial protection is achieved through reduced out-of-pocket spending of the membership while increasing their utilization of health care services. (Jutting 2000, Criel 1999, Desmet 1997, Supakakunti 1997, Atim 1997, Gumber 1999). At the same time, some of the research suggested that the poorest of the poor and socially excluded groups are often not included in community based health financing initiatives (Jutting 2000, Criel 1999, Arhin 1994). Those studies that compared the level of financial protection of scheme members with that of non-members found that belonging to some from of pre-payment scheme reduced the financial burden of seeking health care (Arhin 1994, Diop 1995, DeRoeck 1996, Gumber 1999). Two studies indicated that community financing does not eliminate the need for broader coverage in the case of catastrophic health care expenditures (Pradhan 2000, Xing-Yuan 2000).

Table 7. Studies that Looked at Ways to Prevent Impoverishment

Studies that Confirmed Key Hypothesis Being Tested	Utilization of Members Relative to Non-Members		Level of Out-of-pocket expenditure of members relative to non members	
	Increase	Decrease	Increase	Decrease
Type 1 Community User Fees	3	1	0	1
Type 2 Community Prepayment	4	@ 2	0	6
Type 3 Provider Prepayment	3	0	0	0
Type 4 Linked to Formal System	3	0	0	2

Combating Social Exclusion. Community based health financing schemes appear to extend coverage to a large number of rural and low income populations who would otherwise be excluded from collective arrangements to pay for health care and protect them against the cost of illness. However the poorest of the poor are often excluded even from community financing arrangements. And higher income groups often do not belong to these schemes, thereby segmenting the revenue pool by income groups.

Table 8. Studies that Looked at Ways to Combat Social Exclusion

Studies that Confirmed Key Hypothesis Being Tested	Scheme reaches the poor	Poorest of the poor are not covered	Ability to pay is the main reason for not	Rich do not partici-pate	Distance gradient to scheme provider

			being covered		
Type 1 Community User Fees	**3**	**1**	**1**	**0**	**0**
Type 2 Community Prepayment	**5**	**1**	**2**	**1**	**1**
Type 3 Provider Prepayment	**2**	**2**	**1**	**1**	**1**
Type 4 Linked to Formal System	**3**	**1**	**2**	**1**	**1**

Identification of Determinants

The survey of the literature also looked at factors that would contribute to strengths and weaknesses of the schemes (Jakab et al 2001) in the following four areas: (a) technical design characteristics; (b) management characteristics; (c) organizational characteristics; and (d) institutional characteristics.

The key advantage and disadvantages of community based schemes is precisely their ability to fill the policy, management, organizational, and institutional void left by extreme government failure in securing more organized financing arrangements for the poor. In this context, a number of strengths (Box 2) and weaknesses (Box 3) of community financing schemes have been identified by various past authors

Box 2
Strengths of Community Financing Schemes

The key advantage of community based schemes in terms of their management, organizational, and institutional characteristics include the following.

Technical Design Characteristics

- Revenue Collection Mechanisms
  - Shift away from point-of-service payment to increasing pre-payment and risk-sharing.
  - Flat rate premium which facilitates revenue collection, reduces the scope for manipulation, and contributes to low transaction costs
  - Contribution payment that accommodates the income generating patterns of households employed in agriculture and the informal sector (irregular, often non-cash)
  - Modest degree of household level affiliation
  - Pro-poor orientation even at low income levels through exemptions of premiums and subsidies, despite flat rate contribution rate
  - Some buffering against external shocks though accumulation of reserves and links to formal financing schemes
- Arrangements for Pooling Revenues and Sharing Risks
  - Some transfers from rich to poor, healthy to sick and gainfully employed to inactive through some pooling of revenues and sharing of risk within community groups.
- Purchasing and Resource Allocation
  - Most community schemes take a collective decision about who is covered through scheme based on affiliation and direct family kinship (for whom to buy)
  - Many community schemes define the benefit package to be covered in advance (what to buy, in what form, and what to exclude)
  - Some community schemes engage in collective negotiations about price and payment mechanisms

Management

- Most community schemes are established and managed by community leaders. Community involvement in management allows social controls over the behaviour of members and providers that mitigates moral hazard, adverse selection, and induced demand.
- Many schemes seek external assistance in strengthening management capacity
- The management culture tends to be consensual (high degree of democratic participation)
- Most schemes have good access to local utilization and behavior patterns

Organizational Structure

- Most community schemes are distributed organizational configurations that reach deep into the rural and informal sectors
- Incentive regimes includes: (a) extensive decision rights; (b) strong internal accountability arrangements to membership or parent community organization; (c) successful schemes are able to accumulate limited reserves but unsuccessful schemes often ask governments for bailouts; (d) mainly factor market exposure since few overlapping schemes compete with each other in the product market: and (e) some limited coverage of indigent populations though community or government subsidies
- Vertical integration may lead to increased efficiency and quality services. Schemes that have a durable partnership arrangement or contractual arrangement with providers are able to negotiate preferential rates for their members. This in turn increases the attractiveness of the scheme to the population and contributes to sustainable membership levels.
- Better organized schemes use horizontal referral networks and vertical links to formal sector

Institutional Environment

- Stewardship function is almost always controlled by local community rather than central government or national health insurance system apt to making the schemes responsive to local contexts
- Ownership and governance arrangements (management boards or committees) are almost always directly linked to parent community schemes, with fee-standing health insurance schemes being extremely rare
- There is little competition in the product market
- Limited competition in factor markets and through consumer choice

Box 3.
Weakness of Community Financing Schemes

The following weaknesses of community financing schemes have been identified by several past authors (Carrin, Desmet and Basaza 2001; and Bennett et all 1998).

Technical Design Characteristics

- Revenue Collection Mechanisms
  - Without subsidies, resource mobilization is limited when everyone in the pool is poor
  - Many of the poorest do not join since they cannot afford premiums
  - Pro-poor orientation is undermined by the regressive flat rate contributions and when a lack of subsidies or premium exemption creates a financial barrier for the poor
  - Community based voluntary pre-payment schemes are also prone to adverse selection
  - Few schemes have re-insurance or other mechanisms to buffer against large external shocks
- Arrangements for pooling revenues and sharing risks
  - The scope for transfers within very small pools is limited (often less than 1000 members per scheme)
- Purchasing and resource allocation
  - Without subsidies, the poorest are often left out (for whom to buy)
  - The benefit package is often very restricted (what to buy, in what form, and what to exclude)
  - Providers can often exert monopoly power during price and payment negotiations

Management

- Community leaders are as vulnerable to adverse incentives and corruption as national bureaucrats
- Even with external assistance, absorptive capacity in management training is limited
- Extensive community consultation is time consuming and can lead to conflicting advice
- Most schemes do not use modern information management systems

Organizational Structure

- Even very distributed organizational configurations may have difficulty to that reaching deep into the rural and informal sectors
- There are often conflicting incentives, especially among high level of decision rights, soft budget constraints at time of deficits (bail outs by governments and external sources of funding such as NGOs), limited competitive pressures in the product markets and lack of financing to cover the poorest population groups
- The less organized schemes are often cut off from formal sector networks

Institutional Environment

- Government stewardship and oversight function is often very weak leading to a poor regulatory environment and lack of remedies in the case of fraud and abuse
- Ownership and governance arrangements are often driven by non health and financial protection objectives
- Choice in strategic purchasing is limited by small number of providers in rural areas
- True consumer choice is often limited by lack of a full insurance and product market, leading to (a) adverse selection (signing on only the better-off, working age, and healthy); (b) moral hazard (members making unnecessary claims because they have insurance coverage); (c) free-rider effect (households waiting until they think they will be sick before joining); and (d) information asymmetry (e.g., concealing pre-existing conditions).

Discussion of Main Findings from Asia Regional Review

The review of selected Asia experiences emphasized the heterogeneity of community financing schemes and the fact that their performance is highly dependent on the nature of their technical design, management, organizational, and institutional characteristics. For the purpose of this review, Hsiao 2001 classified community involvement in health care financing into the following five types: (a) direct subsidy to individuals (Thai Health Card and Tanzania Community Health Fund): (b) cooperative health care (Jiangsu Province and Tibet); (c) community-based third party insurance (Rand Experiment in Sichuan Province and Dana Sehat); (d) provider sponsored insurance (Dkaha Community Hospital, Gonoshasthya and Bwamanda ; and (e) producer/consumer cooperative Grameen).

Based on this typology, the Asia review ranked the community financing schemes examined according to their potential impact on several intermediate outcome indicators (coverage, equity in financing, efficiency and cost containment in service delivery, access, quality and degree of risk sharing). The results are summarize in Table 11 below.

Table 11: Potential Value Added by Types of Community Financing Schemes

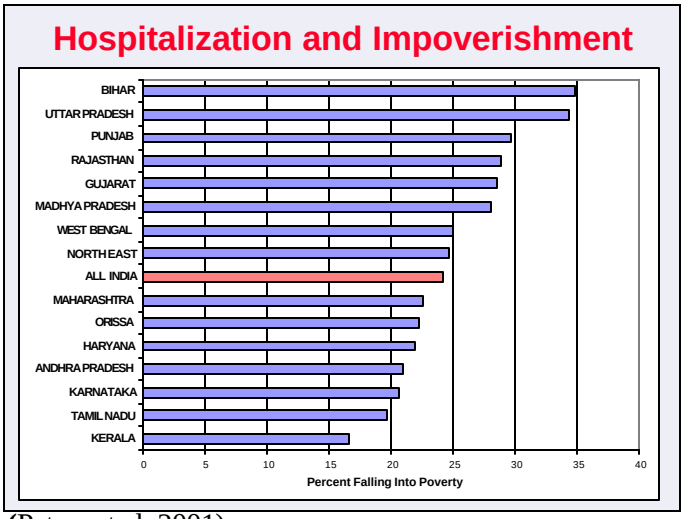
Type of Community Financing Scheme	Who controls use of fund	Popula-tion to be covered & raise funds	Equity in finan-cing	Increase efficiency and reduce cost	Improve access	Improve quality	Greater risk pooling
Prepay User Fees	Government	Low	Low	None	Low	Low	Low
	Individual. households	Modest	Low	None	Modest	Low	Low
Cooperative Healthcare	Local community and special purpose NGO	High	Low	High	High	High	Modest unless govt sub
Community based 3rd party Insurance	Community	Cover Higher Income families	Low	Low	High for those insured	Low	High
Provider sponsored Insurance	Hospitals	Cover higher income families	Low	Low	High for insured	Low	High
Provider or consumer cooperative	Cooperatives	Cover member	Low	High	High	High	Medium

Source: Hsiao 2001

Based on this framework, the review made the following observations:

- Rural households and urban poor households are willing to prepay a portion of their health services. The resources that can be raised in this manner depends on both economic and social factors.
- Since the membership of many community financing schemes consists of poor households, their ability to raise significant resources to pay for health care is limited by overall income level of the community in question, the exposure to out-of-pocket payment when not enrolled, the availability and size of subsidies and satisfaction with the services provided. The poor and near poor are more motivated to prepay if their contributions are supplemented by a government or donor subsidies. In the case of the poorest households this subsidy has to be a large share of the total payment.
- The social factors that influence membership rates include a sense of kinship, mutual community concern, trust and confidence in the management of the scheme. But even under the most favorable circumstances total membership.
- A major value added of community financing schemes is their impact on access to services and the manner in which those services are managed. Well performing funds appear to influence access to quality services, efficiency of service provision, and containment of costs.
- In many instances, government and NGOs involved was instrumental in catalyzing the startup of the community financing schemes in question, its management, and sustainability
- Finally, members appear to prefer coverage for both primary care and more expensive hospital care. Since many schemes do not mobilize sufficient resources to pay for both, many communities opt for primary care coverage through which they will use on a more regularly for their basic health care

needs than insurance coverage for rarer and more expensive events that may only happen once or twice in a lifetime and whose concept is often poorly understood. This creates a tension or trade-off between individual needs/demands for basic care and household/community needs for financial protection (see Figure 2).



(Peters et al. 2001)

Discussion of Main Findings from Africa Regional Review

The review of selected Africa experiences (Arhin-Tenkorang 2001) emphasized that a common feature of many of the reforms that have been introduced during the past couple of decades in this region have consisted of co-payments to influence utilization patterns and direct out-of-pocket user charges to mobilize much needed additional resources (Vogel 1990). Most of the population currently does not benefit from formal insurance coverage and government expenditure often do not meet the basic health needs of the poor, let a long the whole population (Abel-Smith and Rawal 1994). These user charges add significantly to the financial hardship of poor households who are often fully exposed to the financial risks associated with illness. This is especially true during recent years due to the rising incidence and prevalence of HIV/AIDS, TB and other communicable diseases.

A central premise of the Africa review is that individuals in the informal sector of poor countries are unable to access appropriate health care – particularly curative care – at the time of need partially due to lack of adequate insurance coverage (Arhin-Tenkorang 2001). Although preventive measure may have long term payoffs in improving the overall welfare and productivity of the population, the income shock associated with seeking access to curative and palliative care has become such a great financial burden for the poor that some form of insurance coverage has to be considered an essential part of any serious poverty alleviation strategy.

The first section of the paper conceptualizes how performance of a scheme in terms of risk protection and resource mobilization is influenced by the interaction between several design features and institutional factors. In the absence of risk protection, several African studies demonstrated that poor households often deferred visits to formal health facilities until their illness became quite severe or used ineffective self-medication that was sometimes injurious to their health, leading to both more severe health and more severe financial consequences than if they had sought care earlier.

Key design features included the methodology and the nature and quality of the data used to determine contribution levels, benefit package and level of subsidies. The argument being that appropriate specifications requires: (a) data which is often not collected or available on willingness-to-pay

(WTP) and ability-to-pay of the target population; b) data on projected costs of the benefits that will be consumed; and c) operational modalities that facilitate interaction between individuals acting in an informal environment and a range of formal organization and. The review concludes that in an informal environment, decisions cannot rely on written such information since the needed data is usually not available in this form. To be effective and affordable, activities undertaking by community financing schemes must be based on simple and direct observable behavior patterns that have a low transaction cost.

Key institutional features included the degree of congruence between the operating rules of the scheme and the normal behavior patters of the participating population. It also included the degree of past experience of participating health care providers with third party payments and contractual arrangements. The review found that these institutional factors had a significant influence on the nature and extent of community participation in any given scheme, as well as the quality of its management and monitoring of performance. The review did not examine other institutional factors such as government regulations and laws governing insurance and health care provision.

The second part of the paper proposes the design features of several potential "high population schemes" for the informal sector in Africa and assesses their performance with respect to risk protection and resource mobilization. Potentially "high population" schemes examined included the Abota Village Insurance Scheme (Guinea-Bissau), Bwamanda Hospital Insurance Scheme (former Zaïre), Carte d'Assurance Maladie (CAM) program (Burundi), Dangme West Health Insurance Scheme (Ghana), Nkoranza Community Financing Health Insurance Scheme (Ghana), and Community Health Fund (CHF) (Tanzania). These schemes had large target populations, they provided a comprehensive range of benefits and geographically accessible to its members. Key factors influencing enrolment appeared to include: (a) a matching of the premium level a willing and ability to pay; (b) availability of government subsidies for the poor who cannot afford the basic premium; (c) ready access to basic care for common health problems such as OPD/and emergency care - both geographic proximity and availability of range of basic services appeared to significantly impact enrolment.

The final part of the paper presents a set of policy measures that national and international health policy makers may consider implementing to increase the level of risk protection provided for informal sector populations. The financial risk protection and resource mobilization that can be achieved by any given scheme appears to be influenced by the compatibility between the way they are designed and operated with the behaviour of the individuals and households from the informal sector that enrol in the schemes. The enrolment rate of a given population with such schemes appear to reflect the target population's willingness-to-pay (WTP) which is turn is closely related to their ability-to-pay (ATP). In most cases some central government support in the form of fiscal transfers and/or budget allocations is necessary, given the low level of resources available at low income levels in poor communities. Schemes that are operated as solidarity-based partnerships with service providers appear to create additional incentives to increase efficiency and accountability. The authors conclude that national government policies, a legal framework and financial support for these organizations are likely to be a good investment of scarce government resources. The authors emphasize that, in the absence of established best practices in the design of community financing schemes, donor funding, procedures and regulations in supporting community financing through communities, local governments, and local non-government organizations (NGOs) still needs further pilot testing to identify the elements that would be needed to expand or to go to scale.

Discussion of Main Findings from Micro-Level Household Survey Analysis

Determinants of social inclusion in community financing

The results from the micro-level household survey analysis in terms of the determinants of social inclusion through community financing are varied. Table 9 below presents the

determinants that were found statistically significant in the 5 household surveys (Jakab et al 2001). The key finding from this part of the study include the following:

Table 9. Statistically significant determinants of inclusion in community financing

	Rwanda	Senegal	India (1)	India (2)	Thailand
Model	Logit	Probit	Logit	Logit	Logit
Dependent variable					
Dependent variable	Proportion of population enrolled in 1 of 66 schemes	Proportion of population enrolled in 1 of 4 schemes	Proportion of population enrolled in SEWA-insurance	Proportion of population enrolled in SEWA-insurance	Proportion of population purchased new health card, continued, dropped out, never purchased
Independent variables: individual & household characteristics					
Income/assets	No	**Yes**	No	No	**Yes**
Age	No	No	**Yes**	**Yes**	No
Education	**Yes**	No	No	No	**Yes**
Gender	No	No	-	-	No
Health status	No	-	**Yes**	**Yes**	**Yes**
Household size	**Yes**	No	**Yes**	No	-
Marital status			**Yes**	No	No
Religion	-	**Yes**	-	No	-
Distance of household from scheme provider	**Yes**	-	-	-	-
Independent variables: community characteristics					
Community marker for unobservable ch.	**Yes**	**Yes**	-	-	-
Solidarity	N/A	**Yes**	N/A	N/A	N/A

Yes: variable is significant at least at the 10% level. No: Variable is not significant. (-) : not included in the particular model

- Income and other socio-economic determinants. In Senegal and Thailand household income was a significant determinant of being member of a pre-payment scheme while in Rwanda and India income was not significant.
- Other individual and household characteristics. Health status was included in the analysis of the Rwanda, Thailand, and in both India surveys. In all three surveys, the analysis confirmed the presence of adverse selection that characterizes voluntary pre-payment schemes. Patients with recent illness episodes or with chronic illnesses are more likely to purchase a pre-payment plan. Distance of the household from the provider of the scheme was included in the Rwanda analysis. Households less than 30 minutes from the health facility of the scheme were four times as likely to belong to the pre-payment scheme than households living further away.
- Community Characteristics. Dummy variables for community characteristics were significant predictors of the probability of enrolling in the pre-payment scheme (Senegal and Rawanda).

Determinants of financial protection in community financing

The results in terms of the determinants of financial protection through community financing are varied. Table 10 below presents the determinants that were found statistically significant in four of the household surveys. The household survey conducted in Thailand did not permit to analyze the determinants of out-of-pocket payments and therefore was excluded from the analysis. The key finding from this part of the study include the following:

- Insurance effect. In three of the four household surveys, membership with a community financing scheme was a significant determinant of the probability of using health care and in reducing the level of out-of-pocket payments. This confirms our original hypothesis that even small scale pre-payment and risk-pooling reduce financial barriers to health care (Rawanda, Senegal, and India).
- Socio-economic determinants. The analysis indicated that even with insurance low-income remains a significant constraint to health care utilization and ability to pay out-of-pocket payments (Rawanda, Senegal, and India).
- Other determinants. Distance from scheme provider was a significant determinant of the likelihood of using health care (Rawanda, and Senegal).

Table 10. Summary findings: Statistically significant (at least at 10%) determinants of utilisation and out-of-pocket expenditure patterns

	Rwanda		Senegal		India (1)		India (2)	
	Utilisation	**OOPs**	**Utilisation**	**OOPs**	**Utilisation**	**OOPs**	**Utilisation**	**OOPs**
Model	Logit	Log-linear conditional on (use>0)	Logit	Log-linear conditional on (use>0)	Logit	Log-linear conditional on (use>0)	Logit	Log-linear conditional on (use>0)
Dependent variable								
Dependent variable	Proportion of sample w/ at least one visit to professional health care provider	Total illness related out-of-pocket payment per episode of illness for the full episode	Proportion of sample w/ at least one hospitalization	Out-of-pocket spending of hospitalisation	Proportion of sample reporting any health care use	Total annual direct and indirect cost of health care use	Proportion of sample w/ at least one hospitalization	Total annual out-of-pocket payment for use of hospital care
Independent variables: Insurance effect								
Scheme membership	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	No	No	**Yes**
Independent variables: Individual & household characteristics								
Income/assets	**Yes**	**Only for poorest quartile**	**Only for richest terzile**	**Yes**	No	**Yes**	**Only for richest quintile**	**Only for richest quintile**
Age	**Yes**	No	No	**Yes**	No	-	**Only for oldest group**	**Only for oldest group**
Education	No	No	No	No	No	-	No	**Yes**
Gender	No	**Yes**	**Yes**	No	No	-	-	-
Health status/severity of illness	**Yes**	No	-	**Yes**	**Only for very severe**	**Yes**	**Yes**	**Yes**
Household size	No	No	-	-	No	**Only small hh size**	No	**Yes**
Marital status	-	-	-	-	No	-	No	No
Religion	-	-	-	-	-	-	**Yes**	**Yes**
Distance of household from scheme provider	**Yes**	No	**Yes**	No	-	-	-	-

Note: other control variables were included in some of the studies but as they are not discussed in the paper, we did not include them in this table.

Discussion of Main Findings from Macro-level Cross Country Analysis

A first observation was that most routine national level statistical sources do not include data on the share of overall financing that is channeled through either community-based or private health insurance schemes (Carrin and Zeramdini 2001). The analysis therefore had to focus on the degree of collective risk sharing provided at low income levels through different combinations of general tax revenues and social insurance.

The equations have been estimated with the ordinary least squares method, using data for the explanatory variables HEC, EDU and PHE% that pertain to the year 1997. The GINI index pertains to specific years, depending upon the country, within the period 1986-1999. In this synthesis paper, we only present the 'best' regressions[2] in summary Tables 1 and 2Except for the functional form of the regression for DALE, we only present the results of the logit specification. The estimation results for the ***basic model*** presented in summary Table 1 are discussed next.

First, concerning the **level of health (DALE**), the effects of DARS, HEC and EDU are as expected and are statistically significant at the 1% significance level.

Secondly, from the equation for the **level of responsiveness (IR)**, we see that HEC and EDU do not have a statistically significant impact. One major reason is likely to be that the index of responsiveness contains both elements of respect for persons and client orientation, and that these are influenced differently by HEC and EDU. For instance, HEC may be important in explaining client orientation, whereas it may not be when explaining respect for persons. Therefore, when analysing the determinants of the overall index of responsiveness, the effect of HEC may disappear. Notice, however, that both the coefficients of DARS and DMRS have the expected sign and are statistically significant.

Thirdly, the explanatory power of the regression for the **index of fair financing (IFFC)** is minimal; DARS does not have a statistically significant impact on the IFFC. We submit that the major reason for this unsatisfactory results is the relatively small sample size. Moreover, the sample did not include sufficient data on countries with advanced and with low-risk sharing. For instance, the (full sample) data on advanced risk-sharing are those of Bulgaria, Jamaica, Kyrgyzstan, Romania and Russia, and do inadequately reflect the experience of high-income countries with either social health insurance or general taxation financing.

Fourthly, in the equation for the **distribution of responsiveness (IRD)** the coefficient of DARS is statistically significant. The impact of DSHI is statistically insignificant. Fifthly, the results for the **index of equality of child survival (IECS)** show that both DARS and DMRS have statistically significant impacts.

We next present the estimation results for the ***enlarged model*** with the GINI index as an explanatory variable in the equations for the distributional measures. The results are presented in summary Table 2In the **fair financing equation (IFFC)**, which has very low explanatory power, the coefficient of the GINI index has the anticipated sign but is not statistically significant. The coefficient of DARS is also not statistically significant.

Related to the **distribution of responsiveness (IRD)**, the result shows significant impacts of both DARS and DMRS, as well as of the GINI index. All coefficients have the expected sign. One can

[2] 'Best' according to the adjusted R-squared and/or the Akaike criterion, as well as the theoretical consistency of the model. In addition, only the results using restricted samples (these are samples where data points have been deleted from the 'full' samples because of uncertainty in the risk-sharing classification) or restricted samples with additional deletion of influential data are presented.

conclude that these risk-sharing arrangements are efficient in counterbalancing the overall effect of income inequality. A threshold for the GINI indices can be computed, indicating the value above which risk-sharing is no longer able to counteract the effect of overall income inequality. In the case of a country with an advanced risk-sharing scheme, the threshold value is 57.9. In the case of medium risk-sharing schemes, the threshold is 26.3. From these estimates, one can infer that advanced risk-sharing schemes are more effective in counteracting the effects of overall income inequality in society. For example, let us assume that a country has a GINI of 35. If this country has an advanced risk-sharing scheme, its effect will outweigh the impact of income equality: the combined effect will be +0.8588. However, if the country has a medium-risk sharing arrangement, the combined effect will be –0.3252.

In the regression result related to the **inequality of child survival (IECS),** the sign of the GINI coefficients is against our expectations. Surprisingly, the coefficient of GINI is also statistically significant at the 10% level. The coefficient of DARS has the anticipated sign, however, and is statistically significant at the 1% level.

Inclusion of the ***interaction variables*** with PHE% in the equations did not result in a general improvement of the estimation results. For instance, in a number of cases, the coefficients of DARS have the correct sign but are statistically insignificant. In other instances, the coefficient of DARS has a negative sign. Further estimations were done with *transformed* interaction variables. In the case of the interaction between DARS and PHE%, the variable constructed was DARS*(PHE%-0.5). The coefficient associated with this variable reveals the impact of the difference between PHE% and a threshold of 50%. The results for IR, IFFC, IRD and IECS are not satisfactory: the coefficient of the new interaction variable has a wrong sign, is not statistically significant, or both. Only in the case of DALE did we obtain a satisfactory result: both the coefficients of DARS and the interaction variable have the expected sign and are statistically significant. This result is presented in summary Table 2In other words, for those advanced risk-sharing systems with a PHE% above 50%, the level of PHE% reinforces the 'average' effect of DARS. For instance, in the case of Oman with a PHE% of 63.31%, the combined impact of DARS and DARS*(PHE% - 0.50) becomes -0.2694. For those countries with a PHE% below 50% (Chile, Republic of Korea, Brunei Darussalam and United Arab Emirates), the initial effect of DARS is weakened. For instance, for Chile with a PHE% of 40.10%, the combined effect of DARS and DARS*(PHE% - 0.50) on the dependent variable becomes –0.1637.

Key conclusions can be drawn from the various estimates. A first conclusion is that the degree of advanced risk-sharing, as measured by the dummy variable DARS, is significant in the equations for four of the five goal measurements. No impact could be found in the case of the index of fair financing, but we submit this is due to the small sample size. In addition, in at least two of these measurements (level of responsiveness, distribution of health), the variable DMRS also has been shown to have a statistically significant impact.

Secondly, when enlarging the set of explanatory variables in the models for the distributional measures with the GINI index, DARS remains statistically significant in the equations for IRD and IECS. In addition, DMRS has a statistically significant impact in the equations for IRD. An additional interpretation emerges from the results, namely that risk-sharing corrects for, or may even outweigh, the negative effect of overall income inequality on the fair financing index and the index of distribution of responsiveness.

Thirdly, using interaction terms with PHE% leads to plausible results for DALE only: the level of PHE% reinforces the average positive effect of advanced risk-sharing.

An analysis with preliminary updated data was also undertaken; since publication of the WHR 2000, WHO has developed updated estimates for the level (HEC) and share of public health expenditure in total health expenditure (PHE%). When using updated data for HEC in the equations for DALE and IR,

similar results (in terms of explanatory power, sign and statistical significance of coefficients) are obtained as those presented here. The use of the updated PHE% does not significantly change the estimates for the equations with the interaction terms. Estimates of the index of fair financing (IFFC) were also obtained for an additional 30 countries. Reestimation of the equations using an enlarged sample of 50, now leads to two interesting results: (i) the advanced risk-sharing dummy variable DARS exerts a statistically significant effect on the fair financing index; (ii) the GINI index has a statistically significant impact on IFFC but is counterbalanced by a health financing system characterised by advanced risk-sharing. These preliminary results prove to be more in line with those obtained for the other distributional measures.

IV. Conclusions and Recommendations

Most community financing schemes have evolved in the context of severe economic constraints, political instability, and lack of good governance. Usually government taxation capacity is weak, formal mechanisms of social protection for vulnerable populations absent, and government oversight of the informal health sector lacking. In this context of extreme public sector failure, community involvement in the financing of health care provides a critical *albeit* insufficient first step in the long march towards improved access to health care by the poor and social protection against the cost of illness. It should be regarded as a complement to -- not as a substitute for -- strong government involvement in health care financing and risk management related to the cost of illness.

Based on an extensive survey of the literature, the main strengths of community financing schemes are the degree of outreach penetration achieved through community participation, their contribution to financial protection against illness and increase in access to health care by low-income rural and informal sector workers. Their main weaknesses are the low level of revenues that can be mobilized from poor communities, the frequent exclusion of the poorest of the poor from participation in such schemes without some form of subsidy, the small size of the risk pool, the limited management capacity that exists in rural and low-income contexts, and their isolation from the more comprehensive benefits that are often available through more formal health financing mechanisms and provider networks.

The results of the macro-level cross-country analysis presented in this Report give empirical support to the hypothesis that risk-sharing in health financing matters in terms of its impact on both the level and distribution of health, financial fairness and responsiveness indicators. The results even suggested that risk-sharing corrects for, and may outweigh, the negative effect of overall income inequality, suggesting that financial protection against the cost of illness may be a more effective poverty alleviation strategy in some settings than direct income support.

The results of the micro-level household data analysis indicated that prepayment and risk sharing through community involvement in health care financing – no matter how small – increases access by poor populations to basic health services and protects them to a limited extent against the impoverishing effects of illness. Community involvement alone is not sufficient in preventing social exclusion since the poorest of the poor often to not participate fully in these schemes. However, the study provided evidence that this constraint in reaching the poorest of the poor could be overcome through well targeted design features and implementation arrangements.

The Asia regional review supported many of these conclusions. In particular the review emphasized that although income is a key constraint to participation by the poorest of the poor, even they are often willing to participate if their contributions are supplemented by a government subsidy and if the benefits that they receive provide access to quality services that address their most frequently encountered health problems. In the context of extreme resource constraints, this creates a tension or tradeoff between

pre-payment for basic services and the need for insurance coverage for rarer and more expensive and life threatening events that may only happen once or twice in a lifetime. This highlights an area of market failure relating to voluntary community involvement in health care financing that needs to be addressed by appropriate government policies since it is precisely during hospital episodes that many of the poor become even more impoverished.

A research done for this report suggested four core areas of policy that would strengthen and improve the effectiveness of community involvement in health care financing: (a) increased and well targeted subsidies to pay for the premiums of low-income populations; (b) use of re-insurance and other mechanisms to enlarge the effective size of the risk pool; (c) assistance in strengthening the management capacity of the schemes; and (d) stronger linkages to the benefits of existing formal financing and provider networks.

A core conclusion of this report is the need for more rigorous research on understanding the institutional strengths and weakness of community involvement in health care financing, and in monitoring and evaluating their impact on financial protection, increasing access to needed health care, and combating social exclusion.

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Annex I

Summary table 1
Estimation results [1] for the basic models

Explanatory variables	*DALE* [2]	*IR* [3]	*IFFC* [2]	*IRD* [4]	*IECS* [5]
	Ln (80- DALE)	*(Logit)*	*(Logit)*	*(Logit)*	*(Logit)*
Constant	4.9423	-0.4896	2.2874	1.6327	0.2798
	(0.3328)	(0.2160)	(0.2786)	(0.4507)	(0.2038)
	(14.8493)	(-2.2663)	(8.2099)	(3.6228)	(1.3329)
HEC	-0.1919	0.0000			
	(0.0197)	(0.0003)			
	(-9.7498)	(0.1150)			
EDU	-0.2141	0.0032			
	(0.0834)	(0.0026)			
	(-2.5684)	(1.2540)			
DARS	-0.2963	0.7244	-0.1146	4.2257	0.6269
	(0.0654)	(0.2244)	(0.6072)	(0.8228)	(0.3868)
	(-4.5321)	(3.2275)	(-0.1888)	(5.1355)	(17.1343)
DSHI		-0.2521		-1.4049	
		(0.1987)		(0.9107)	
		(-1.2688)		(-1.5427)	
DMRS		0.2673		0.7217	0.6203
		(0.1148)		(0.5355)	(0.2497)
		(2.3294)		(1.3478)	(2.4845)
DMRS1					-0.1079
					(0.4607)
					(-0.2343)
DMRS2					-0.6458
					(0.3995)
					(-1.6165)
R-squared	0.7874	0.5678	0.0021	0.5749	0.8778
Adjusted R-squared	0.7821	0.4597	-0.0566	0.5276	0.8671
S.E. of regression	0.2639	0.2134	1.0791	1.1924	0.7350
Ak. Info criterion	0.2049	-0.0525	3.0894	3.3097	2.3149
Sample size	124	26	19	31	51

[1] The first and second coefficients in the brackets refer to the standard error and t-statistic, respectively.

[2] Restricted samples.

[3] Bulgaria excluded from the sample.

[4] Chile and Poland are excluded from the full sample.

[5] Uzbekistan excluded from the restricted sample.

Summary table2

Estimation results [1] for the enlarged models

Explanatory variables	*IFFC* [2] *(Logit)*	*IRD (Logit)*	*IECS* [2] *Logit)*	*DALE* [2] *Ln(80- DALE))*
Constant	2.8260 (1.3698) (2.0630)	3.0610 (0.7956) (3.8539)	-0.7471 (0.9164) (-0.8153)	4.9446 (0.3306) (14.9580)
GINI	-0.0119 (0.0296) (-0.4020)	-0.0375 (0.0180) (-2.0853)	0.0355 (0.0206) (-0.8153)	
DARS	-0.2568 (0.7162) (-0.3586)	2.1713 (0.5222) (4.1577)	5.3537 (0.5531) (9.6789)	-0.2088 (0.0843) (-2.4774)
DARS*[PHE%- 0.5]				-0.4556 (0.2798) (-1.6284)
DMRS		0.9873 (0.4637) (2.1291)		
HEC				-0.1898 (0.0196) (14.9580)
EDU				-0.2166 (0.0828) (-2.6155)
R-squared	0.0121	0.5191	0.7053	0.7920
Adjusted R-squared	-0.1114	0.4590	0.6906	0.7850
S.E. of regression	1.1067	0.9320	1.1912	0.2621
Ak. Info criterion	3.1846	2.8286	3.2550	0.1990
Sample size	19	28	43	124

[1] The first and second coefficients in the brackets refer to the standard error and t-statistic, respectively.

[2] Restricted samples.