

# Improving access for the poorest to public sector health services: insights from Kirivong Operational Health District in Cambodia

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This article presents research findings into the effectiveness of an innovative equity fund approach to improving access to public sector health services for the poor in Kirivong Operational Health District in Cambodia. The operational health district is the lowest organizational level in the Cambodian health system, providing services through health centres and a single referral hospital. An equity fund involves a third party identifying the poor and paying user fees on their behalf by reimbursing the service provider, thus relieving health staff of such responsibility.

We explore the appropriateness of utilizing community members to identify the poorest. The impact of newly introduced pagoda-managed equity funds on access to public health services for the poorest, and on their out-of-pocket expenditure during illness episodes, is then examined. We conclude with an evaluation of the contribution of the equity funds to community participation.

The research indicates that identification by community members of those eligible for equity funds is feasible, accrues minimal direct costs, and is effective. Households identified as eligible for equity fund benefits were poorer than those identified as non-beneficiaries. Direct costs associated with seeking care were considerably lower for equity fund beneficiaries than for non-beneficiaries, and fewer beneficiaries than non-beneficiaries initially consulted the private sector, providing evidence of the equity fund's ability to attract the poorest to the public sector. The level and nature of community participation was enhanced considerably following the introduction of the pagoda-managed equity funds.

In order to maximize and sustain the equity benefits of such funds, we recommend that external agencies (such as international non-governmental organizations) limit their role to the provision of technical support and advice, rather than taking the lead on implementation and administration. Facilitating the design, implementation, administration and management of equity funds by indigenous community-based organizations has the advantage of not only greatly reducing administrative costs, allowing a large proportion of the fund to be spent on services for the poor, but also of enhancing local ownership, thus increasing the likelihood of equity funds being sustained in the future.

**Key words:** health care financing, access, equity, user fees, community, local ownership

## Introduction

Exemption from user fees for the poorest is necessary to ensure equitable access to health care in those developing countries in which such fees are charged for public health services (Mills 1991; Price 2001). However, there are a number of difficulties with granting such exemptions. One arises when revenue from user fees is used to supplement the salaries of and/or to provide incentives for health facility staff (Whitehead et al. 2001; Meng et al. 2002), or is intended to contribute to facility operational costs (Kivumbi and Kintu 2001). In the absence of financial compensation to health providers for revenue lost through

user fee exemptions, there is a tendency to favour the treatment of patients who can pay. One way to overcome reluctance by public health staff to provide services free at the point of delivery is by compensating them financially for care provided to the poorest, through what are known as equity funds. An equity fund involves a third party identifying the poor, and paying user fees on their behalf, thus relieving health staff of such responsibilities (see Hardeman et al. 2004 for an elaboration of the concept of equity funds).

Identifying those eligible for exemptions is fraught with difficulties (Mills 1991; Gilson et al. 1995; Willis and

Leighton 1995; Whitehead et al. 2001), especially in a population that is relatively uniformly poor. The most appropriate way to identify the poorest is through means testing (Willis and Leighton 1995; Laterveer et al. 2003). The National Institute for Public Health in Cambodia is currently piloting the use of community-based and community-led wealth ranking (see Price 2001: 8). However, identification of the poorest by local people – who are more likely to possess relevant knowledge of their communities – may be undermined by the self-interest of the identifiers, or by nepotism. Using independent organizations to identify the poorest may improve the level of objectivity but is expensive (Braveman and Tarimo 2002; Price 2002).

While the immediate objective of an equity fund is to provide the poorest with financial access to health services, the long-term objective should be to facilitate a process whereby the poorest achieve equity through experiencing more control over the decisions that influence their health and lives (Laverack and Labonte 2000; Rifkin 2003). This requires building community capacity to define, assess, analyze and act on health concerns of importance to its members, especially the poorest (Gibbon et al. 2002).

In the discussion that follows, we assess the appropriateness of utilizing community members to identify the poorest, using pre-set criteria to support direct targeting for user fee exemptions. The article goes on to provide an overview of an innovative approach to managing equity funds in Kirivong Operational Health District in Cambodia, and examines the impact of such equity funds on access to public health services for the poor and on their out-of-pocket expenditures during illness episodes. We conclude with an evaluation of the contribution of the equity funds to community participation.

## Background

Kirivong Operational Health District (KOD), one of 69 operational health districts in Cambodia, is located in Takeo Province in the southeast of the country, on the border with Vietnam. The operational health district represents the lowest organizational level in the Cambodian health system, and provides services through health centres and a single referral hospital. According to Ministry of Health guidelines (Ministry of Health, Cambodia 1997: 3) an operational health district should cover a population of between 100 000 and 200 000 people, with one health centre per 10 000–12 000 population. Its main roles are defined as maintaining effective, efficient and comprehensive services; and interpreting, disseminating and implementing national policies and provincial health strategies. KOD is comprised of four administrative districts with a total of 31 communes and 290 villages. The population of 201 870 (1998 census) – mostly rice farmers living at subsistence level – is served by 20 health centres and an 80-bed referral hospital. There are 91 pagodas and five mosques. Pagodas are the monasteries for Buddhist monks and the temples for

Buddhist religious ceremonies. With 90% of the Cambodia population being Buddhist (Legerwood and Un 2003), pagodas represent pivotal social institutions: their roles include schooling, moral education, community decision-making, political advice, spiritual counsel and conflict resolution. The Buddhist clergy evokes widespread popular deference, and has exceptional power to influence social behaviour at the grassroots level. Buddhism is deeply connected to Khmer national identity.

Government expenditure on health in Cambodia is growing, but private health providers are ubiquitous throughout Cambodia. The private sector is unregulated and exploitative: service providers emphasize curative over preventive services, provide treatment according to ability to pay, and often ignore best practice (Hardeman et al. 2004; Jacobs and Price 2004; Van Damme et al. 2004). Private providers ‘...aim at maximizing profits by selling whatever people are willing to pay for. Because of the unregulated health care market, household ‘out-of-pocket’ expenditure on health is very high and inequitable. ... [In] Cambodia catastrophic health expenditure is identified as a major cause of indebtedness and destitution among the rural poor’ (Hardeman et al. 2004: 23). Other research in Cambodia has also shown the high costs associated with consulting private providers (Jacobs and Price 2004; van Damme et al. 2004). In a study of dengue fever patients’ health-seeking behaviour and out-of-pocket expenditure, van Damme et al. (2004) showed that those who consulted a private provider paid a mean of US\$103, while those consulting the public sector paid a mean of US\$8. With integration of the private health sector into an overall public policy framework a long-term challenge (Mills et al. 2002), the immediate objective in Cambodia is the development and introduction of strategies which focus on ‘...influencing health-seeking behaviour to promote initial consultation with public providers, and bringing first-line curative services closer to the people’ (Jacobs and Price 2004). In this context, a key objective of equity funds in Cambodia is to provide the poorest with financial access to public sector health services, especially to those facilities employing a transparent user fee scheme (Akashi et al. 2004; Barber et al. 2004).

Public sector social service provision in Cambodia is severely under-developed. Consequently, the management and operation of many social services relies upon civil society organizations, often with external donor support. Equity funds in Cambodia, for example, are currently operated in several hospitals and managed by local non-governmental organizations (NGOs). However, these NGOs are dependent upon external funds (Crossland and Conway 2002; Hardeman et al. 2004), which renders them susceptible to donor priorities, thereby potentially undermining sustainability. Operating equity funds through local NGOs also reduces the proportion of the donor funds spent on the poorest: Hardeman et al. (2004) report that 40% of donor funding to a local NGO operating an equity fund in the north of Cambodia is devoted to administrative costs. Furthermore, limiting

provision of equity funds to hospital care may create a perverse incentive to delay care seeking until the clinical condition requires hospitalization. This in turn results in more complex and consequently more expensive treatment for the provider and imposes additional costs on the poorest, such as income forgone due to inability to work. Ensuring financial access to first-line community-based health centre services is therefore necessary, but this poses an enormous administrative burden if the respective procedures are not integrated into existing structures or are managed by a single organization.

Community participation in KOD has been enhanced since November 2001, when Health Centre Co-Management Committees (HCCMC) were established at all health facilities (Jacobs and Price 2003). HCCMCs meet monthly, and are composed of two pagoda-associated (or mosque-associated<sup>1</sup>) volunteers per religious institute within their catchment area. For health centres with only one pagoda, the Chief Monk of the parish appointed two volunteers per village. At a later stage, they were joined by the respective Commune Chiefs. At operational district level, these community participation structures were supplemented by meetings every 6 to 8 weeks between senior staff members of KOD, the District Deputy Governors and District Chief Monks.

User fees were introduced at all facilities following the establishment of HCCMCs. Their introduction considerably reduced access to hospital care for the population, especially the poorest, and created a medical poverty trap (Jacobs and Price 2004). An equity fund was subsequently introduced in KOD in May 2003, in an attempt to reduce the impact of user fees on the poorest. To optimize the degree of community participation, it was agreed that activities related to the equity fund would be conducted by the principal actors in community participation at KOD, namely pagodas and related volunteers. An international NGO acted as a mediator for the process. Following meetings between the District Chief Monks and Deputy Governors, it was agreed that a viable equity fund would require three basic tenets: simple and reliable procedures for identification and verification of eligible households; financial access for beneficiaries to both health centre and hospital services, along with minimal administrative overheads by integrating related procedures within existing structures and activities; and provision of 'seed money' by a third party (in this case an international bilateral donor) to instigate activities, while ensuring continuation of funding from the community following depletion of the starting capital.

#### *Identification of households*

The criteria for eligibility to benefit from equity funds, formulated by the District Chief Monks and Deputy Governors and displayed in Box 1, were based upon the likelihood of a household having to pay high interest rates on any loans (exacerbated for those without property or other assets to act as security), or having to sell remaining productive assets due to health care costs.

#### **Box 1.** Criteria for eligibility to benefit from the equity funds

Comply with all three major criteria:

- Poor composition of house (roof and wall from thatch/palm/bark/aluminium sheets);
- Owning less than 0.5ha of land;
- Having a daily household income of R4000 or less\*;

and

Comply with at least one additional criterion:

- No 'luxury goods' assets (such as TV, motorcycle);
- No farm animals;
- Having at least seven economically inactive household members.

\*R4000 = US\$1.

Using these criteria, eligible households were identified by the Village Chief and HCCMC members residing in or close to the concerned village. The socioeconomic status of the identified households was endorsed by the respective Pagoda Chief Monk. The HCCMC members – all pagoda volunteers – and Village Chiefs recorded the names of all members of eligible households, the eligibility criterion which applied, and the head of household's identity card number or election card number (the latter is provided to adults registering for elections and contains a passport photograph). These completed lists were photocopied and provided to all respective village, commune and district authorities; pagoda chief monks; and health facilities, including the referral hospital.<sup>2</sup> The lists are regularly updated, subject to all required signatories approving new entries or the removal of households who become ineligible because of asset or income acquisition. Members of households identified as being eligible for benefiting from the equity funds were to be informed regarding their status by the HCCMC members or village chiefs. A total of 6829 households with 32 220 members were identified. This represented 16% of the operational district's population, ranging from 10.5 to 47.8% per commune.

#### *Financial access and administrative procedures*

The District Chief Monks decided to assign one Pagoda Committee per health centre to manage the respective equity funds, with other pagodas (and mosques) collecting money and transferring it to the in-charge pagoda. The equity funds reimburse providers the fees for health centre and hospital services provided to equity fund beneficiaries (EFBs). At the health centre, EFBs are eligible for exemptions from the costs of curative and midwifery services, and contraceptives (all other services are free of charge at the point of delivery). Upon presenting at the health centre, EFBs were required to present their identity or election card. Health staff verified eligibility from the identification list and provided a voucher in duplicate upon delivery of health services. One voucher is retained at the health centre while the other is given to the EFB,

who hands it over to the HCCMC member, either directly or through other pagoda volunteers (who are omnipresent in the community and meet weekly at the pagoda). Health centres are paid for the services provided to the EFBs during the respective monthly HCCMC meeting. A similar system was used for reimbursement to the referral hospital during the monthly meeting between the Operational District Administration and HCCMC Chiefs.

#### *Continuation of funding by the community*

Pagodas rely on voluntary donations for their existence and have developed a range of fundraising methods (in addition to religious ceremonies) to ensure a continuous source of income. These fundraising skills were employed to replenish the seed money (equivalent to US\$0.12 per identified EFB) provided by the international bilateral donor. Fundraising methods included the introduction of specially designed equity fund collection boxes at the pagodas, alongside those used for collecting for the daily operations of the pagoda, prominently displayed during ceremonies and weekly Sabbath days. Other sources of community finance for the equity funds came from a share of the money collected at annual religious rituals, and through Bun Pka (flowering) ceremonies, which are spontaneously organized usually to fundraise for pagoda construction work.

#### *Role of the international NGO*

The international NGO acted mainly as a moderator and limited its additional tasks to securing seed money for the funds, printing and photocopying identification forms, drafting the standard operating procedures, and provision of vouchers and collection boxes.

## Methods

Cross-sectional surveys were conducted 5 and 11 months after the commencement of the equity funds (September 2003 and March 2004, respectively). Both surveys used a similar approach but took place at different villages. The aim of the first survey was to ascertain the feasibility of targeting using the approach described above. The feasibility of this targeting approach is indicated by the proportion of households identified as eligible for equity fund benefits that comply with the pre-set criteria. The indicators selected for assessing the appropriateness of targeting were the reported daily household income ( $\leq$ R4000) and the size of land owned ( $\leq$ 0.5 ha). Households were considered not to comply with the pre-set identification criteria if they reportedly had land of more than 0.5ha and concurrently mentioned a daily household income of more than R4000 (US\$1). The second survey aimed to assess the impact of the equity funds on out-of-pocket expenditure for health care and attempted to determine the likelihood that an identified EFB would receive free care at a public health facility within KOD.

Four trained, female, secondary school graduates interviewed female adult members of EFB and non-beneficiary

**Table 1.** Sampling procedures for surveys

	Stratum 1	Stratum 2
Number of health centres	10	10
Population per facility (median of all populations)	< median	> median
Number of villages per health centre visited	1	2
Number of EFBs per village interviewed	10	10
Number of NBs per village interviewed	10	5
Total number of EFB interviews	100	200
Total number of NB interviews	100	100

EFB = equity fund beneficiary; NB = non-beneficiary.

(NB) households using a piloted pre-coded questionnaire. Table 1 sets out the sampling procedures for the two surveys. For the 10 health centres that had less than the average number of EFBs for all health centres, one village was randomly selected. From this village's list of EFB households, 10 such households were randomly selected for interview. Following the interview with the EFB, one of the adjacent NB households was approached for interview (10 interviews per village). At health centres where the reported number of EFB households was more than the average of EFBs for all health centres, two villages (one <5km from the facility and one >5km) were randomly selected. At each of these villages, 10 EFB and 5 NB households were approached. Interviews took place following consent, and nobody refused. The first survey focused on questions related to material of the roof and floor, presence or absence of farm animals and assets (TV, motorbike), number of household members and number of these economically active, size of farmland owned, and daily household income. In the second survey questions related to the number of illness episodes observed, the seriousness of the condition (children's ability to eat or play and adults' ability to work), number of days ill, whether care was sought for the illness episode, if so where and when, reasons for delaying care seeking (i.e. waiting more than 1 day upon onset of symptoms), and direct costs related to care seeking (consultation fees and transport costs). Only the illness episodes of household members during the 30 days preceding the interview were considered. A recall period of 30 days was found to be reliable, especially if payment for treatment occurred during this period (and is in line with the methodology used by Yanagisawa et al. 2004). In the event that more than one household member was ill during the preceding month, questions regarding care seeking and direct costs related only to the household member who was most recently ill during that period.

Additional information regarding the number of health centre consultations and hospitalizations by EFBs was derived from the monthly health information system (HIS) reports. The data related to hospitalization did not include tuberculosis patients, as their hospitalization is free of charge. Quantitative data related to the revenue generating ability of the equity funds were obtained through Health Centre Management Committee members who are involved in the management of the equity funds.

**Table 2.** Characteristics of interviewees and households (survey 1)

Variable	Equity fund beneficiary (n = 299)	Non-beneficiary (n = 201)	p
Median age of interviewees (range)	42 years (18–82)	41 years (20–87)	NS
Mean number of household members (SD)	5.1 (2.059)	5.6 (1.722)	0.004
Mean number who earn income (SD)	1.9 (0.707)	2.3 (0.836)	<0.001
Mean daily income (SD)	2112 (972.40)	6870 (3436.44)	<0.001
Profession (%)			
Farmer	192 (64)	173 (86)	df = 3
Business woman/man	5 (2)	22 (11)	<0.001
Civil servant	0	2 (1)	
Casual worker	102 (34)	4 (2)	
Literacy (%)			
Illiterate	213 (71)	91 (45)	df = 2
Read only	47 (16)	47 (23)	<0.001
Read and write	39 (13)	63 (32)	
Floor (%)			
Natural (earth/sand/clay)	188 (63)	35 (17)	df = 2
Rudimentary (wood planks/bamboo)	111 (37)	124 (62)	<0.001
Finished (polished wood/tiles/cement)	0	42 (21)	
Roof (%)			
Thatch/palm/bamboo/bark	258 (86)	13 (6)	df = 2
Galvanized iron/aluminium	41 (14)	162 (81)	<0.001
Tiles/cement/concrete	0	26 (13)	
Possesses (%)			
Television	9 (3)	87 (43)	<0.001
Motorbike	2 (1)	71 (35)	<0.001
Pig	69 (23)	124 (62)	<0.001
Cow	39 (13)	133 (66)	<0.001
Owns no land (%)	91 (30)	10 (5)	<0.001
Median hectare of land ownership (range)	0.2 (0–2)	1 (0–7)	<0.001
Owns >0.5ha of land (%)	38 (13)	155 (77)	<0.001
Has HH income >4000 (%)	6 (2)	165 (82)	<0.001

n = number; SD = standard deviation; HH = household; df = degrees of freedom; NS = not significant.

Quantitative data were processed using the statistical package EpiInfo version 5.04. Proportions were compared using the Chi-square ( $\chi^2$ ) test and significance determined at 5% ( $p < 0.05$ ). For skewed data a non-parametric test (Kruskal-Wallis) was used, whereas for normally distributed data a parametric test (Anova) was applied. For the costing exercise only means were used. Data were stratified according to location from the health centre ( $\leq 5$ km or  $> 5$ km), being an equity fund beneficiary or not, being a child ( $< 15$  yrs) or an adult ( $\geq 15$  yrs), and initial place of care seeking (public or private).

Participation and equity are interlinked (Rifkin et al. 1988). We used level of community participation as a proxy for assessing the population's willingness to improve equity in KOD. To this end we applied the analytical framework developed by Rifkin et al. (1988), which employs qualitative indicators for five factors that influence the process and degree of participation: needs assessment, leadership, organization, resource mobilization and management. For each factor a five-point ranking scale that measures the degree of participation is provided, ranging from 'narrow' participation at one extreme (ranked 1) to 'wide' participation at the other (ranked 5), with three levels in between of 'restricted' (which we term as 'limited' in our analysis), 'fair' and 'good' (ranked 2, 3 and 4, respectively). We have previously reported on community participation in KOD

before the introduction of equity funds using the Rifkin et al. framework (see Jacobs and Price 2003). In the discussion section of the article, we revisit this framework to assess the influence of the pagoda-managed equity funds on community participation in KOD.

## Results

### Targeting

During the first survey, 500 female adults from 500 different households were interviewed. Sixty per cent ( $n = 299$ ) belonged to a household identified as eligible for the equity fund. Table 2 displays an overview of the characteristics of the respondents and their assets. EFB households reported an average daily income that was roughly one-third (US\$0.53) of a NB household (US\$1.72). Considerably fewer EFB households relied on farming as a source of income than NB households (64% and 86% respectively), and one in three EFB households had no other source of financial income than casual labour (vs. 2% of NB). Of EFBs, 71% were illiterate and only 13% could both read and write. The respective figures for NBs were 45% and 32%. Significantly more EFB houses than NB houses were built of natural, unfinished materials, while significantly fewer EFB households than NB households possessed luxury items such as televisions and motorcycles, or

**Table 3.** Severity of illness and (timing of) care seeking (survey 2)

Variable	Equity fund beneficiary N (%)	Non-beneficiary N (%)	p
<b>Children</b>	<b>n = 83</b>	<b>n = 55</b>	
Child is unable to play or eat	34 (41)	16 (29)	NS
Median number of days unable to eat/play (range)	3 (1–30)	3.5 (1–7)	NS
Child is ill and seeks treatment	66/76 (87)*	47 (86)	NS
Seeks treatment on 1st day	39/66 (59)*	21 (45)	NS
Median number of days waited before seeking treatment (range)	1 (1–15)*	2 (1–15)	NS
<b>Adults</b>	<b>n = 137</b>	<b>n = 87</b>	
Adult is unable to work	76 (54)	33 (38)	0.009
Median number of days unable to work (range)	9.5 (1–60)	7 (1–90)	NS
Adult is ill and seeks treatment	96/123 (78)*	73 (84)	NS
Seeks treatment on 1st day	48/96 (50)*	25 (34)	0.04
Median number of days waited before seeking treatment (range)	1.5 (1–20)*	3 (1–30)	0.03

\*informed beneficiaries only (i.e. aware of equity fund beneficiary status); NS = not significant.

owned farm animals. One in three EFB households reportedly did not own any land compared with one in 20 NB households. The median size of land for EFB households was 0.2ha (range 0–2) compared with 1ha (range 0–7) for NB interviewees. Of those EFB with more than 0.5ha of land, none reported a daily household income of more than R4000.

#### Illness incidence and health care seeking

During the second survey, 499 adult females from 499 households were approached and all consented to be interviewed: 300 (60%) belonged to a household identified as eligible for the equity fund. The median age of the EFBs interviewed was 42 years (range 17–85) and 39 years (range 21–78) for NBs (Kruskal-Wallis,  $p = 0.007$ ). Ninety-one per cent of EFBs ( $n = 272$ ) had been informed of their status by the identifiers. As the number of non-informed EFBs is too small to allow for statistical comparison with informed EFBs, the data relating to health care seeking and out-of-pocket expenditure concern only informed EFBs. The proportion of households who experienced at least one incidence of illness during the month preceding the interview was similar for EFBs and NBs: 73% and 71%. The mean total number of ill members was also similar per household experiencing illness amongst its members: 1.14 (standard deviation [SD] = 0.406) and 1.16 (SD = 0.434), respectively.

Table 3 provides an overview of the reported severity of illness and timing of care seeking. Although a higher proportion of EFB children (41%) were reportedly more severely ill than NB children (29%), this was not significant. The duration of the severe illness episode was also similar for both groups. Statistically equal proportions of EFB children and non-EFB children sought care and did so on the first day of illness. However, significantly more ill adults from EFB households were unable to work due to illness (54%) than ill adults from NB households (38%). Equal proportions of ill adult EFBs and NBs sought care ( $\approx 80\%$ ), but

**Table 4.** Reasons for not seeking care or delaying care seeking when ill

Reason	Equity fund beneficiary* n = 112 n (%)	Non-beneficiary n = 96 n (%)
Used medicine available at home	22 (20)	13 (14)
Not too seriously ill	63 (56)	65 (68)
No money for consultation	22 (20)	1 (1)
No money for transport	43 (38)	2 (2)
Too busy or nobody to take care of the home	28 (25)	29 (30)

\*informed beneficiaries only.

significantly more adult EFBs sought care on the same day as the commencement of illness than adult NBs: 50% vs. 34%, respectively. They waited on average 1.5 days before seeking care compared with 3 days for ill NBs.

#### Reasons for not seeking care or delaying care seeking

A total of 112 informed EFBs and 96 NBs did not seek care or waited more than 1 day upon onset of symptoms before seeking care. The principal reason for this non-action or delay was that the condition was deemed not too serious: 56% of EFBs and 68% of NBs (Table 4). About a third of NBs (30%) and a quarter of EFBs (25%) reported that they were too busy or had nobody to take care of their house as the reason for non-action or delay. Twenty per cent of EFBs and 14% of NBs resorted to self-medication with medicines available at home. Thirty-eight per cent of EFBs who did not seek care or delayed it mentioned that they did not have money available for transport. This was only the case for 2% of such NBs. Surprisingly, 20% of EFBs not seeking care or delaying it reported the unavailability of money for user fees as a reason (vs. only 1% of NBs).

**Table 5.** Initial place of consultation

1st place of consultation	Equity fund beneficiary n = 162 n (%)	Non-beneficiary n = 120 n (%)
Health centre	74 (46)	50 (42)
Hospital	12 (7)	5 (4)
Drug vendor	36 (22)	21 (18)
Qualified provider	29 (18)	27 (23)
Kru Khmer	2 (1)	1 (1)
Vietnam/Takeo/Phnom Penh	9 (6)	16 (13)

**Table 6.** Initial place of consultation according to distance from the health centre

1st place of consultation	Equity fund beneficiaries		Non-beneficiaries	
	≤5km n = 78 n (%)	>5km n = 84 n (%)	≤5km n = 57 n (%)	>5km n = 63 n (%)
Public	53 (68)	33 (39)	29 (51)	26 (41)
Private	25 (32)	51 (61)	28 (49)	37 (59)

### Place of care seeking

About half the informed EFBs and NBs initially consulted the public sector for the concerned illness episode (Table 5). Equal proportions reportedly went to drug vendors, qualified providers or Kru Khmers (traditional healers). The number of NBs who accessed practitioners in Vietnam, Takeo or Phnom Penh was double that of EFBs.

Table 6 gives an overview of care seeking according to distance (≤5km vs. >5km) from the health centre. Significantly more EFBs living within 5km of the health centre went initially to a public health facility than those residing more than 5km away: 68% vs. 39% respectively ( $p < 0.001$ ). EFBs living within 5km of the health centre were also more likely to consult initially a public health facility than NBs residing within the same area: 68% vs. 51%, although the results were borderline ( $p = 0.046$ ). Equal proportions of EFBs and NBs residing >5km from the health centre initially consulted public health facilities.

### Out-of-pocket expenditure for health care

Interviewees who reported having sought treatment for the illness episode of a household member were questioned regarding the expenditure on consultation(s) and transport to and from the provider(s) (Table 7). A detailed costing analysis for the two age groups combined is provided in Appendix 1.

Direct costs per illness episode for EFBs were half those of NBs: US\$5.7 vs. US\$11.3, respectively. Direct costs

**Table 7.** Direct costs per illness episode

Variable	Equity fund beneficiaries Riels (US\$)	Non-beneficiaries Riels (US\$)
General		
Children	20 977 (5.2)	19 649 (4.9)
Adults	24 200 (6.1)	61 404 (15.4)
All ages	22 889 (5.7)	45 008 (11.3)
Resides within 5km of health centre		
Children	24 518 (6.1)	23 886 (6.0)
Adults	10 207 (2.6)	69 806 (17.5)
All ages	15 385 (3.9)	52 388 (13.1)
Resides >5km from health centre		
Children	18 386 (4.6)	15 920 (4.0)
Adults	38 489 (9.6)	51 829 (13.0)
All ages	29 387 (7.3)	39 459 (9.9)
Contacts initially public sector		
Children	8 946 (2.2)	1 850 (0.5)
Adults	12 483 (3.1)	12 629 (3.2)
All ages	11 331 (2.8)	8 709 (2.2)
Contacts initially private sector		
Children	29 842 (7.5)	30 569 (7.6)
Adults	42 105 (10.5)	144 306 (36.1)
All ages	35 974 (9.0)	89 582 (22.4)

<sup>1</sup>R4000 = US\$1.

were especially lower for adult EFBs (US\$6.1) than NBs (US\$15.4), whereas there were no differences for children of both groups: ≈US\$5. Direct costs were lower for EFBs of all ages residing within 5km of a public health facility than NBs residing in the same area: US\$3.9 vs. US\$13.1, respectively. This difference was most pronounced for adults: US\$2.6 for EFBs and US\$17.5 for NBs. For children residing within 5km of the facility, there were no such differences observed: both US\$6.

Direct costs tended to increase for EFBs when residing more than 5km from a health centre (US\$7.3), although the difference with NBs was small (the latter paid on average US\$9.9). The lowest costs were incurred when initially contacting public health facilities for the illness episode. In such cases, EFBs of all ages paid US\$2.8, although NBs even paid less, US\$2.2. When initially contacting the private sector, EFBs of all ages would bear an average US\$9 in direct costs and NBs US\$22.4.

### Probability of free care at a public health facility for an informed EFB

Of the 31 EFB children who consulted the health centre when ill, 23 (74%) received free care. Three were hospitalized and one did not pay. Health centre consultations constituted 91% (31/34) of all public facility consultations by EFB children. The likelihood of an EFB child receiving free care at a public health facility in KOD is therefore 70% ( $0.74 \times 0.91 + 0.33 \times 0.09$ ).

Adults fared better: 49 of them consulted the health centre, where 41 (84%) enjoyed free treatment. Eighteen

adults were hospitalized (27% of all public health facility consultations by adult EFBs) and 12 (67%) did not have to pay. The probability that an adult informed EFB will receive free care at a KOD facility is thus 79% ( $0.84 \times 0.73 + 0.67 \times 0.27$ ).

Thirty-four per cent of all public health facility consultations by informed EFBs were by children. The likelihood of free treatment at a KOD facility for an informed EFB is 76% ( $0.34 \times 0.70 + 0.66 \times 0.79$ ).

### Number of hospitalizations and consultations by equity fund beneficiaries

During the period May 2003 to March 2004, there were 75 027 new consultations at the health centres, of which 5214 or 7% were by EFBs. The total number of hospitalizations for the same period was 3694, of which 278 (7.5%) were by EFBs. However, hospitalizations by EFBs as a proportion of the total number of hospitalizations ranged from 0.8% for children aged 0–4 years to 27.4% for patients aged 50 years or more.

### Amount spent and collected by equity funds

During the study period, the 20 pagoda-managed equity funds spent US\$2793 on user fees. Of this amount, 52% was spent on health centre services and the remainder at the referral hospital. No costs were incurred in administration of the funds – apart from printing the vouchers – since this was done free of charge by the Pagoda Committees.

Pagodas and mosques jointly collected US\$2046 or 73% of the spent amount. A *Bun Pka* was organized at the end of March 2004 whereby all departments, schools, pagodas and mosques of the four administrative districts collected money for the equity funds. The amount of money collected during this event was US\$2103, such that, in total, the equity funds produced a surplus of US\$1356 (US\$4149 minus US\$2793).

## Discussion

Our findings indicate that identifying the poorest in rural Cambodia along pre-defined criteria is feasible, accrues minimal direct costs,<sup>3</sup> and is effective. The households that were identified along these criteria as equity fund beneficiaries were clearly poorer than their neighbours who were identified as non-beneficiaries, as the data presented above and in Table 2 show in relation to housing, assets and income.

Gwatkin (2000) refers to a global study regarding individual targeting for exempting the poorest from user fees and points out that approaches were effective for only 9 out of 29 countries. Reasons for poor performances included the absence of clearly defined eligibility criteria, and the identification of the households by health care providers. Only 12% of programmes in which identification of the poor was undertaken by service providers were

successful (i.e. had low inclusion error, resulting in those identified as poor proving to be indeed poor) compared with more than 75% of programmes where non-providers conducted the identification process. In KOD, the Deputy District Governors and Chief Monks defined the criteria, and households were identified by Village Chiefs and HCCMC members with endorsement of the socio-economic status by the respective Pagoda Chief Monk. The costs for the operational district to identify the poorest at 290 villages were limited to photocopying and distributing the identification lists.

Although 13% of EFBs reportedly owned land of more than 0.5ha (contrary to the criterion), the daily household income of these respondents never exceeded R4000 (US\$1), indicating that no-one in our sample was included in the exemption eligibility list who was not vulnerable according to the criteria. Although excluding the non-poor is desirable in order to avoid negatively influencing people's willingness to donate to the funds, it has been argued that a certain degree of inclusion error should be tolerated to win support from politically important groups (Gwatkin 2003). Moreover, as Willis and Leighton (1995: 244) point out: 'It is important not to waste resources, which could serve the poor, on administering absolutely accurate means tests to prevent every last non-poor person from receiving waivers.'

In line with findings from Bangladesh and Tanzania (Ahmed et al. 2003; Schellenberg et al. 2003), there were no marked differences in reported number of illness episodes among the poorest (EFB) and better-off (NB) households (both  $\approx 72\%$ ). Equity fund beneficiaries, especially adults, however, tended to experience significantly more severe illness episodes than NBs. Additionally, adult EFBs experienced longer periods of being unable to work when reporting a severe illness episode, than adult NBs (9.5 days vs. 7 days). It is well documented that poverty reduces resistance to disease (Victoria et al. 2003), and it is likely that EFBs experienced more severe illness episodes and thus sought care and treatment more quickly than NBs. This was especially pronounced among adult EFBs, who waited only a median of 1.5 days compared with 3 days by NBs. The reasons for delaying care seeking (i.e. waiting more than 1 day or not seeking care) contrasted between the two groups. Two-thirds of NBs delayed care seeking because they deemed the illness episode not serious, compared with 56% of EFBs. EFBs were more likely to adopt self-medication (using medicines available at home) than NBs (20% vs. 14%). Considerably more EFBs, however, reported lack of money for transport as a constraint to seeking care than NBs (38% vs. 2%). Surprisingly, a fifth of EFBs who delayed care seeking reported that they did so because they had insufficient money to pay user fees (vs. 1% of NBs), suggesting that the process of informing identified households regarding the benefits of the equity fund requires improvement.

The World Bank (2003: 70) asserts that paucity of health information is a major determinant of poor people's lack



of informed choice in health care. In KOD, dissemination of information to identified EFBs could be enhanced by the creation of village groups consisting of representatives of EFB households. Such an approach may also allow appropriate inclusion of poorer households in decision-making and information dissemination in other development initiatives. An elected representative from the village group – ideally someone who is literate – would be mandated to interact with health centre staff during outreach sessions and to participate in Village Development Committee meetings. In addition, the creation of such a village group may reduce the risk of erroneous selection of non-poor and exclusion of the poor for the equity fund.

Almost equal proportions of EFBs (53%) and NBs (46%) consulted the public health sector when ill. This differs considerably from observations reported by Yanagasiwa et al. (2004) in another district in Cambodia, where 14% of the very poor and 5% of the better-off initially went to the public health facilities when experiencing an illness. This contrast is probably the result of the high levels of financial, technical and human resource investment in the public health sector in KOD over the previous 5 years, from both external and Cambodian Ministry of Health sources. However, consistent with the findings from Yanagasiwa et al. (2004), distance from a public health facility directly reduced poor people's likelihood of accessing the facility. Whereas a public health facility was the first point of contact in health-seeking for 68% of informed EFBs residing within 5km of the facility, this reduced to 39% for those residing >5km. Such differences were not observed for NBs (51% vs. 41% respectively), while significantly more informed EFBs residing within 5km of the public health facility first sought treatment at the facility than NBs living in the same area. These data, together with the finding that a third of EFBs who delayed care seeking did so because of no money for transport, indicate that reimbursement of transport costs may attract more EFBs to the public health sector.

Although we did not stratify the data according to disease/condition, direct costs associated with seeking care were considerably lower for EFBs (US\$5.7) compared with NBs (US\$11.3). It is unclear, however, whether this is due to the equity fund. For example, EFBs who initially went to the public sector paid an amount similar to NBs (US\$2.8 and US\$2.2, respectively), and the probability that an informed EFB received free care at such facilities was 76%. It is likely that the observed difference in overall out-of-pocket expenditure is due to the fact that fewer informed EFBs initially consulted the private sector. This supports the observation by Van Damme et al. (2004) that the main strength of an equity fund is not necessarily reduction of out-of-pocket expenditure for the poor but rather the ability to attract them to the public sector where they spend considerably less than at the private sector.

### **The influence of the equity funds on community participation**

To assess the influence of pagoda-managed equity funds on the population's willingness to improve the level of equity, we assessed changes in the level and nature of community participation, using a framework previously employed in KOD (Jacobs and Price 2003) and as discussed in the methods section above (see Figures 1 and 2).

#### *Needs assessment*

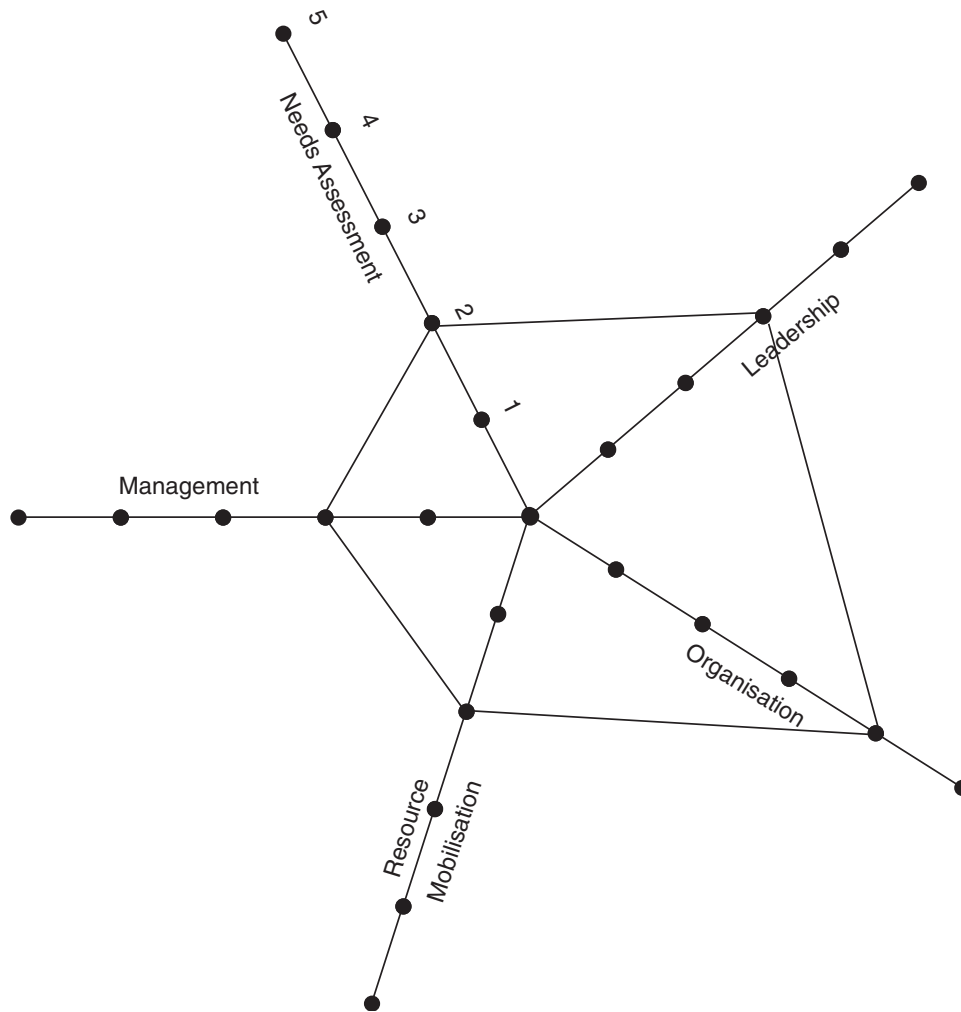
We argued previously (Jacobs and Price 2003) that this dimension of community participation in KOD was 'limited' because needs assessments were conducted by NGO staff with little or no feedback provided to the community, and because the concerns of the community were not fully addressed. Introduction of the pagoda-managed equity funds increased the needs assessment ranking to 'good'. The selection criteria for eligibility for the funds were defined by the District Deputy Governors and District Chief Monks, and the poor were accordingly identified by the Village Chiefs and HCCMCs. The community, through the pagoda volunteers, implemented related activities such as dissemination of information to identified households, collection and/or donation of money for the funds, and management of the funds. The beneficiaries themselves, however, were not directly involved in the analysis of the results of the identification process, which tended to be done by the Pagoda Chief Monks prior to endorsing the socioeconomic stratum of the listed households.

#### *Leadership*

Leadership was considered to be 'fair' prior to the commencement of the pagoda-managed equity funds. While pagoda volunteers were found to be highly trusted by female interviewees and they often raised concerns about the poor during HCCMC meetings, following the introduction of the pagoda-managed equity funds, the volunteers went further and not only raised concerns but also money, and as such ensured financial access to health services for the poorest. There appeared to be little nepotism or self-interest among the leadership, since none of our sample households were identified to be in breach of the selection criteria. Leadership is therefore now graded as 'wide'.

#### *Organization*

The degree of organizational participation was considered 'good' in KOD before the pagoda-managed equity funds, as members of the community participation structures for health were already part of the pagodas' well-established community networks. This dimension of participation is considered to have broadened to 'wide' since the introduction of the equity funds: pagodas and related volunteers have demonstrated effective collaboration with Cham Muslims, official authorities and health officials, as well as integrating the administrative procedures for the equity funds into the operations of the Pagoda Committees at no financial cost.



**Figure 1.** Community participation in KOD, July 2002 (using the Rifkin et al. 1988 framework)

### *Resource mobilization*

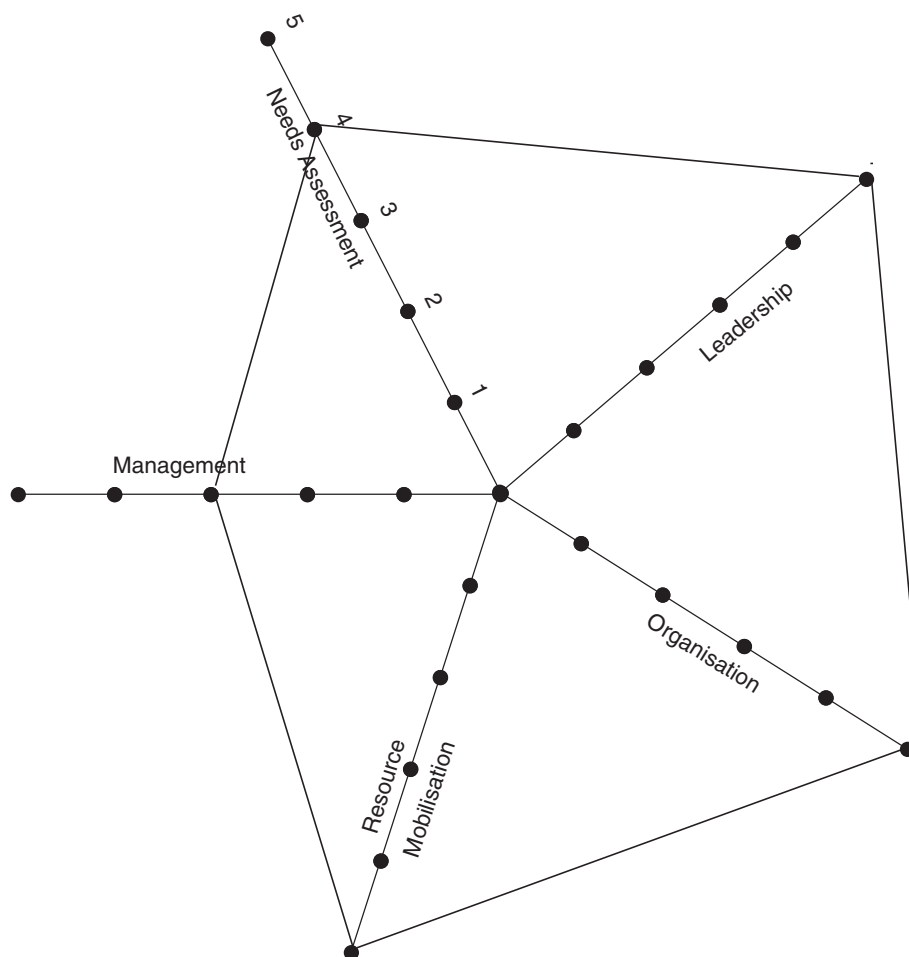
Before commencing the pagoda-managed equity funds, resource mobilization was considered to be 'limited' only, as there had been insufficient utilization of the pagoda volunteers' demonstrable ability to raise funds and to direct such efforts towards health-related initiatives. The current analysis demonstrates that this fundraising potential has now been harnessed to ensure financial access to health care for the poorest 16% of the population. Decisions on how to spend the money which was fundraised are reached by consensus, and utilization of the funds is under the control of the community since they decide who should benefit and which services should be reimbursed. Mobilized financial resources are benefiting only the poorest, at least among our sample. Although fundraising is organized by the pagoda volunteers, most of the community contribute financially for the benefit of the poorest. Resource mobilization is thus now graded as 'wide'.

### *Management*

Because most of the health initiatives implemented by pagoda volunteers were initiated by the international

NGO, and as planning and evaluation were undertaken by health professionals, the degree of participation in management was considered to be 'limited' prior to the pagoda-managed equity funds. Although the idea for these equity funds came initially from the NGO representative, the official and religious district authorities enthusiastically embraced and operationalized the concept. The initiative was further fully integrated into existing pagoda management structures and linked to the public health facilities through the HCCMCs and related members. Evaluation, however, remains the responsibility of health professionals, resulting in participation in management since the introduction of the pagoda-managed equity funds being ranked as 'fair'.

The approach employed at KOD for identifying the poor and managing the equity funds carries the risk of a reduction in the inherent voluntarism over time, whereby the main actors will expect financial compensation. However, we have shown elsewhere that pagoda volunteers are significantly less inclined to request financial remuneration than formally elected community representatives, thus considerably reducing such risk (Jacobs and Price 2003).



**Figure 2.** Community participation in KOD, May 2004 (using the Rifkin et al. 1988 framework)

## Conclusion

In conclusion, our research has shown that engaging an existing community-based organization (in this case the pagoda) to plan, target and manage an equity fund was not only effective in terms of meeting the immediate objective of an equity fund – improved financial access for the poorest to public health services – but also increased considerably the level of community participation in health. A key operational recommendation emerging from the research relates to the role of external agencies in health equity funds. In order to maximize and sustain the equity benefits of such funds, it is recommended that external agencies (such as international NGOs) limit their role to the provision of technical support and advice, rather than (as is so often the case in Cambodia and elsewhere) taking the lead on implementation and administration. Facilitating the design, implementation, administration and management of equity funds by indigenous community-based organizations has the advantage of not only greatly reducing administrative costs, allowing a large proportion of the funds that are allocated and/or fundraised to be spent on services for the poor, but also of enhancing local ownership, thus increasing the likelihood of equity funds being sustained in the future.

## Endnotes

<sup>1</sup>The Cham Muslim minority was invited to send two representatives per mosque (five in total for KOD) to join the respective HCCMCs (Jacobs and Price 2003).

<sup>2</sup>The use of lists, while simple and low cost, may be contentious for reasons of confidentiality. However, it should be noted that pagodas act in the interests of the poor (see Jacobs and Price 2003) and village chiefs are prominently involved in the poverty alleviation programme of the Cambodian government. Within the villages and neighbourhoods, households' socioeconomic status is known to most people. It is only when people (occasionally) attend health facilities outside their neighbourhood that they may feel stigmatized; within their own community, this is not the case.

<sup>3</sup>As previously explained, the lists are updated regularly through the addition (or removal) of eligible households, and therefore no additional resources are required to repeat the whole exercise.

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#### Appendix 1. Detailed costing analysis of direct cost for all age groups in Riels

Variable	Equity fund beneficiary n = 162 Total (average per person consulting the facility)	Non-beneficiary n = 120 Total (average per person consulting the facility)
Cost, 1st consultation		
Health centre	13 500 (182)	42 500 (850)
Hospital	242 000 (20 166)	95 500 (19 100)
Drug vendor	314 000 (8 722)	257 000 (12 238)
Qualified practitioner	1 243 000 (42 862)	998 000 (36 963)
Kru Khmer	301 800 (150 900)	20 000 (20 000)
Vietnam	370 000 (61 667)	445 000 (40 455)
Takeo/Phnom Penh	180 000 (60 000)	1 950 000 (390 000)
Sub-total (per person)	2 664 300 (16 446)	3 808 000 (31 733)
Transport cost, 1st consultation		
Health centre	47 500 (642)	28 000 (560)
Hospital	205 000 (17 083)	31 500 (6 300)
Drug vendor	30 700 (853)	15 000 (714)
Qualified provider	51 000 (1 759)	58 000 (2 148)
Kru Khmer	0	0
Vietnam	42 000 (7 000)	109 500 (9 955)
Takeo/Phnom Penh	28 000 (9 333)	115 000 (23 000)
Sub-total (per person)	404 200 (2 495)	357 000 (2 975)
Cost, 2nd consultation		
Health centre	4 000 (667)	4 500 (750)
Hospital	5 000 (833)	7 000 (7 000)
Drug vendor	0	19 000 (19 000)
Qualified provider	236 000 (47 200)	1 500 (1 500)
Kru Khmer	50 000 (25 000)	100 000 (100 000)
Vietnam	30 000 (30 000)	725 000 (145 000)
Takeo/Phnom Penh	200 000 (200 000)	285 000 (142 500)
Sub-total (per person)	525 000 (3 241)	1 142 000 (9 517)
Transport cost, 2nd consultation		
Health centre	9 500 (1 583)	0
Hospital	64 000 (7 111)	4 000 (4 000)
Qualified provider	14 000 (3 500)	5 000 (5 000)
Kru Khmer	2 000 (1 000)	15 000 (15 000)
Vietnam	9 000 (9 000)	60 000 (12 000)
Takeo/Phnom Penh	16 000 (16 000)	10 000 (5 000)
Sub-total (per person)	114 500 (707)	94 000 (783)
<b>TOTAL</b>	<b>3 708 000 (22 889)</b>	<b>5 401 000 (45 008)</b>