

CHAPTER IV

ANALYSIS AND RESULTS

4.1. COST OF FIRST YEAR (1996) OF OUTREACH PROGRAM

Since sexual contact has been found the major mood of HIV transmission in Cambodia, outreach program to direct commercial sex workers has also been implemented as well. This program was initiated and directed by National AIDS Program that is funded by World Health Organization.

National AIDS Program work as head quarter who is responsible for preparing all program activities and budget plans to 20 provinces and 2 major cities, because fund provided by donor goes to National AIDS Program first and then was distributed latter on to ali provinces and cities. The other important role of National AIDS Program is to organizing training, evaluation workshop and field supervision. Furthermore, almost all IEC materials used in the program were also produced and distributed by National AIDS Program.

As a result, all costs incurred during the process of implementation, supervision and evaluation workshop for the whole program were recorded at National AIDS Program. However for some costs, which are beyond control of National AIDS Program but are under responsibility of implementers , are not all available and which is needed to be estimated by using expert opinion.

As outreach program was started to implement at the same time countrywide, all costs also begun to occurred at the same time as well. Costs are calculated separately for each province and total costs of the program are the sum of cost of 20 provinces and 2 capital cities. We will include only accounting costs of provider spent for the first year of intervention. Since the aim is to determine the cost of the implementation of the outreach program, any cost for survey components of the project will be excluded in the calculation.

Total costs are devised into two parts:

- Recurrent cost which consists of the costs of personnel, supplies and operating.
- Capital costs which compose of the costs of vehicles, equipment, and building.

The costs data were organized to construct the cost items in which all resources were listed by quantity and unite price. All costs are in local currency 'Riel' with exchange rate of the year1996 was 2720 Riels per one US dollar.

4.1.1. Recurrent costs

1. Cost of personnel

There are three types of staff who are directly involved in the outreach program:

- Outreach worker (at national level, and provincial and municipal level)
- Health educator (at national level, and provincial and municipal level)
- Peer educator which are Commercial sex workers who have been recruited and trained to be tool staff for implementation of the program.

Table 4.1 : Distribution of staff in each province and cities

No	Province/Cities	Outreach worker	Health educator	Peer educator
1	Phnom Penh	1	1	6
2	kandal	1	1	5
3	Svay Rieng	1	1	4
4	Prey Veng	1	1	4
5	Kampong Cham	1	1	4
6	Kampong Chhnang	1	1	4
7	Pursat	1	1	4
8	Battambang	1	1	4
9	Koh kong	1	1	4
10	Stung Treng	1	1	3
11	Kampong Thom	1	1	3
12	Banteay Meanchey	1	1	3
13	Siem Reap	1	1	3
14	kampong Speu	1	1	3
15	Takeo	1	1	3
16	Kompot	1	1	2
17	Sihanouk Ville	1	1	2
18	Kratie	1	1	3
19	Rattanakiri	1	1	3
20	Preah Vihea	1	1	1
21	krong Kep	1	1	0
22	Mondul Kiri	1	1	0
23	National AIDS Program	1	1	0
Total		23	23	68

Source: National AIDS Program, Ministry of Health

The full costs of employing personnel of outreach program include salary, incentive, bonus, and expenditure for staff in attending training, workshop, and field supervision

- Salary, bonus and incentive

Outreach worker and health educator are government staff who are employed to run the program funded by WHO, so that they get salary (32,100 Riels per month) and bonus (10,000 Riels per year) from government. In addition these government staffs also get incentive monthly (108,800 Riels per month for outreach worker and 87,040 Riels per month for health educator) from the program budget. But Peer educators on the other hand, they are hired by the program and they are get paid only 87,040 Riels per month from program budget.

Table 4.2 : Total yearly salary, bonus and incentive paid to staffs of Outreach program

	Outreach worker	Health educator	Peer educator	Total
Salary				
Salary/m	32,100	32,100	-	
Staff	23	23		
Month	12	12		
Subtotal	8,859,600	8,859,600	-	17,719,200
Bonus				
Bonus/y	10,000	10,000	-	
Staff	23	23		
Year	1	1		
Subtotal	230,000	230,000	-	460,000
Incentive				
Incentive/m	108,800	87,040	87,040	
Staff	23	23	68	
Month	12	12	12	
Subtotal	30,028,800	24,023,040	71,024,640	125,076,480
TOTAL				143,255,680

*Unit: Riel

(See detailed calculation in table 2, Appendix A)

- Cost of program supervision

Supervision was carried out once a year by National AIDS Program. Staffs were sent to provinces and major cities. Expenditure on supervision, by using budget

from government and program , includes travel and allowance paid to supervisor within their stay in the provinces and major cities. According to the standard of payment of the government(Ministry of Health), for those who has mission to province, same to all provinces, must get paid 5000 Riels for travel and 27,200 Riels per day for food and accommodation. But the standard of payment from program budget is not the same for mission to all provinces. Staff will be paid 40,800 Riels per day for food and accommodation, and for travel staff are get paid according to the distance of the province they go (by taxi or by air).

Table 4.3 : Cost of program supervision in 1996

Cost item	Subtotal
1.Travel	3,597,200
2.Allowance	6,269,600
Total	9,866,800

*Unit: Riel

Total cost of supervision from National AIDS Program to 20 provinces and 2 major cities is 9,866,800 Riels per year. (See detail calculation in table3, Appendix A)

- Cost of evaluation workshop

The evaluation of program performance was made once a year through a 3 days-workshop which was organized by National AIDS Program. Participants are invited from 20 provinces and 2 major cities . Expenditure for the workshop includes travel, allowance, stationary, coffee break and room.

Table 4.4 :Total cost of annual program evaluation workshop for 1996

Cost item	Subtotal
1. Travel	2,607,400
2. Allowance	6,201,600
3. Stationary	272,000
4. Coffee break	408,000
5. Room	816,000
Total	10,305,000

*Unite: Riel

The total cost of the workshop is 10,305,000 Riels. (See detail calculation in table 4, appendix. A)

2. Supplies

All materials used as direct inputs into every activity during first year of intervention were considered and calculated. Those material are mainly IEC material (Information, Education and Communication materials) which consist of bag, flipchart, T-shirt, cap, poster, and leaflet. Some materials were produced from the beginning such as materials used for starting up the program. But some were produced and distributed along according to time and need. As a result, during first year of intervention three types of poster and six types of leaflet were produced. The amount of IEC materials used in each province are proportionate to the size of that province, that mean it depends on the number of brothel, CSWs and Peer educator in that province.

The most important thing is condom which is always available in anytime. The condoms used for intervention, like the other program, were provided by WHO and which were imported from Thailand with quality guaranteed. Condoms were distributed monthly to every provinces and cities with proportion to number of CSWs and frequency of Peer education session. Each time they get educated by our peer educator, one CSW received 8 condoms, four times a month.

The price of each item will be determined according to the market price and the total costs of these supplies is the sum of total cost of all items. Price of condom used in the calculation is the price of import from Thailand (3.8 US dollars/ gross of 144 condoms) with free of all tax.

Table 4.5 : Total cost of supplies of Outreach program for the first year

Cost item	Amount	Unit price	Subtotal
1. Bag	114	32,640	3,720,960
2. Flipchart	114	21,760	2,480,640
3. T-shirt	228	5,440	1,240,320
4. Cap	228	2,176	496,128
5. Poster	2,428	1,632	11,887,488
6. Leaflet	5,230	204	6,407,640
7. Condom	1,514,880	71.78	108,734,720
Total			134,967,896

*Unite: Riel

(See the detailed calculation in table 6, appendix A)

The total cost of materials used for outreach program in first year was 134,967,896 Riels in which more than 80% was spent for buying condom.

3. Cost of operating and maintaining capital items

Cost of operating and maintaining consist of 3 components such as,

- The cost of operating and maintaining vehicle : outreach program rely heavily on vehicle (motorbike) to bring peer educators and outreach workers from one area to another or between brothels. All too often, vehicles are provided but fail to operate efficiently either for lack of fuel or spare parts. The inputs involve in operating and maintaining of motorbike including fuel, lubricant, tires and spare parts. The record of expenditure for them is not available at National AIDS Program and the calculation is based on the standard of provision of fuel and lubricant from the ministry of Health, say 5 liters of fuel per week for motorbike, and consult with drivers and mechanics.

- The cost of operating and maintaining of building which include water, electricity and renovation. Since expenditure records are available for some province, the average of given data was used to estimate monthly expenditure for other province which have similar status.

-The cost of operating and maintaining equipment include cost of repairing, spare parts and printing ink for computer and printer.

Table 4.6 : cost of operating and maintaining capital items for one year

Cost item	Subtotal
1. Operating and maintaining vehicle	6,348,000
2. Operating and maintaining building	9,044,000
3. Operating and maintaining equipment	5,467,200
Subtotal	20,859,200

*Unit: Riel

(See the detailed calculation in table 7, appendix A)

The total cost of maintaining vehicle, building and equipment were 20,859,200 Riels.

4.1.2 Capital cost

The capital costs incurred by outreach program consist of cost of vehicle (motorbike), major equipments, furnitures, training for long term staffs, and building.

Since every capital items have it own useful life, the calculation of capital cost were based on the assumption that the useful life is n years, inflation i and interest rate r (at the year where calculation is being done) remains unchanged through the period of its useful life. The calculation of capital cost was done in two steps, first was the calculation of future cost of each capital item by the end of its useful life and second was the calculation of its cost for the first year of intervention.

The first year of outreach program is year 1996 in which inflation and interest rate used by ministry of Finance were 9% and 10.2% respectively, and the exchange rate was 2720 Riels for 1 US dollars.

1. Vehicle

Outreach program relies mainly on motorbike to distribute materials and drive staffs from office to the different red light area that is usually fare away from town. Outreach program provided one motorbike to each province and major cities which the initial cost was 4,896,000 Riels per item. Total amount of motorbike purchased by the program at first year was 23. We assume the useful life of motorbike is 10 year.

The future cost of each motorbike at the end of 10 years will be:

$$\begin{aligned} C_{m10} &= 4896000 \cdot (1+0.09)^{10} \\ &= 11,590,613 \text{ Riels} \end{aligned}$$

As future cost C_{m10} is to be spread unequally over 10 years (method 1), the amount P_1 spent for the first year will be :

$$P_1 = \frac{4,896,000 \cdot (0.102 - 0.09) \cdot [(1+0.09)/(1+0.102)]^{10}}{1 - [(1+0.09)/(1+0.102)]^{10}}$$

$$P_1 = 507,756 \text{ Riels}$$

The total cost of vehicle spent at first year of the program is 507,756 Riels * 23 items equals 11,678,393 Riels. (See the detailed calculation in table 9a, appendix A)

2. Equipment and furniture

Equipment used by outreach program are one computer, one printer(available only at National AIDS Program) and 114 penis model which were distributed to every province and cities for demonstrate how to use condom properly.

Furniture used by outreach program consist of 25 bureau tables, 95 chairs, 23 document cupboards, and 23 blackboards.

Table 4.7 : Equipment and furniture used by outreach program

cost item	amount	unit price	useful life
<u>1.Equipment</u>			
-computer	1	7,344,000	5
-printer	1	3,264,000	5
-penis model	114	19,040	5
<u>2.Furniture</u>			
-bureau table	25	136,000	10
-chair	95	16,320	5
-document cupboard	23	108,800	10
-blackboard	23	32,640	10

*Unit: Riel

(See the detailed calculation in table 9a, appendix A)

The total cost of equipment and furniture spent for the first year was 3,560,037 Riels.

3.Training

The training for long term staffs(Outreach worker and Health educator) was organized by National AIDS Program. It was a 5 days-training which was done once for period of five years and followed by the yearly evaluation workshop. Outreach workers and Health educators were invited from 22 provinces and 2 major cities . Expenditure for the training includes cost of travel, allowance for participants, stationary, coffee break and room. The initial total cost of the training is 26,901,360 Riels and the first year cost of training was 5,736,784 Riels. (See detailed calculation in table 5 and 9a, appendix A)

4. Building

Since outreach program is one component among other program for prevention and control HIV/AIDS, each province and each city used only one room for their program which is located inside the building of AIDS Office. All buildings of outreach program are belong to government. So that the cost of rental of one room in each province and city were estimated according to the market price of the year 1996.

Since annual rental embodies both depreciation and opportunity cost of that building, the first year total cost of building incurred by the outreach program is the total rental. Total cost of building spent for the first year is 32,313,600 Riels.

Table 4.8 : Total capital cost incurred by outreach program for first year

Cost items	Initial cost	Use life	Future cost	First year cost
Vehicle				
-motorbike	112,608,000	10	266,584,089	11,678,393
Equipment & furniture				
-computer and printer	10,608,000	5	16,321,723	2,262,183
-penis model	2,170,560	5	1,086,890	962,877
-bureau table	3,264,000	10	7,727,075	338,504
-document cupboard	2,502,400	5	5,924,091	259,520
-chair	1,534,080	10	3,631,725	159,097
-blackboard	750,720	10	1,777,227	77,856
Training	26,248,560	5	40,386,663	5,736,784
Building rental	32,313,600		-	32,313,600
TOTAL				53,288,814

*Unit: Riel

(See detailed calculation in table 9a and 10a, appendix A)

The total capital cost spent for the first year of the program was 53,288,814 Riels.

The calculation first year of capital cost by using method 2 is also provided in table 9b and 10b, appendix A.

4.1.3. Total cost spent for the first year of outreach program

Total cost incurred by outreach program within first year is 372,543,390 Riels (or 136,964 US dollars) in which 44% was spent for personnel, 36% for supplies, 14% for capital cost and 6% for operating and maintaining capital items.

Table 4.9 : Total cost incurred by outreach program within first year (1996)

Cost items	Subtotal
1. Recurrent cost	
-Personnel	163,227,480
-Supplies	134,967,896
-Operating and maintain	20,859,200
	Subtotal 319,254,576
2. Capital cost	
-Vehicle	11,678,393
-Equipment	3,560,037
-Building	32,313,600
-Training	5,736,784
	Subtotal 53,288,814
Grand total	372,543,390

Unite: Riel

As cost was calculated only for the first years of outreach program, which is the chosen year and both recurrent and capital costs occurred at the beginning of the year, total cost derived from above calculation is equal to its present value.

4.2 PERFORMANCE OF OUTREACH PROGRAM

In this part the analysis consists of two parts, the general finding and analysis of the output and outcome of the program.

4.2.1.GENERAL FINDING FROM BEHAVIORAL SURVEY

1. Socio-demographic

- Age

There are 480 CSWs were interviewed in the study and about one third are between 14 and 18 year olds and most are between 19 to 26. Their age vary from 14 to 35 year olds with mean age 20.5 year olds. The mean age of CSWs in each province selected for the study are similar, around 20 year olds..

Table 4.10 : Mean age of CSWs in each province

Province	PP	SHV	KPC	RTK	BTB	ALL
Mean	20y	21.1y	20.7y	19.3y	21.2y	20.5y
S.D	3.5	3.7	3.6	2.4	3.3	3.5
Range	15-34y	14-35y	15-29y	16-24y	16-34y	14-35y
Mode	20	18	20	18	20	20
Median	20	20	20	18.5	20	20

(PP: Phnom Penh, SHV: Sihanouk Vile, KPC: Kampong Cham, RTK: Ratanakiri, BTB: Battambang)

- Nationality

Absolute majority of CSWs (95%) interviewed are Cambodian, while the other 5% are Vietnamese. Actually the number of Vietnamese CSWs are more, but because of difficulty in communication, most of them were excluded from the study. The distribution of Vietnamese CSWs in the five province are found almost equal, this indicates that Vietnamese CSWs is spread over the country.

- Marital status

Since most of CSWs are young, more than half of them (55.8%) reported they are single, 37.2% are divorced, 4.3% are separated and only 2.7% are currently married.

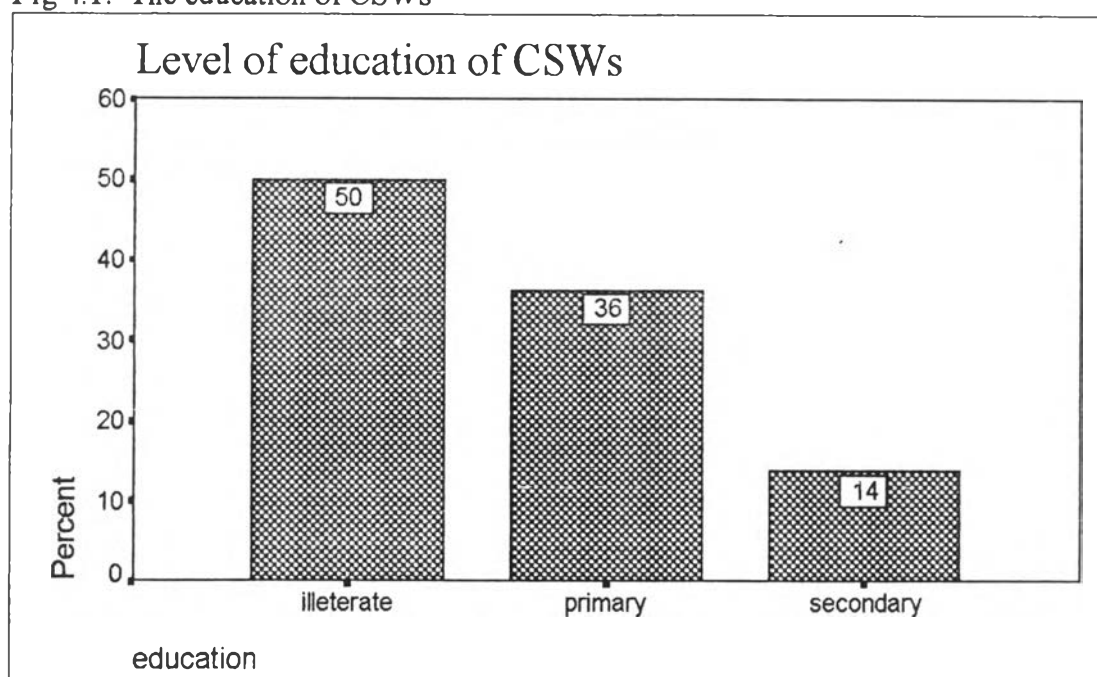
- Children

Only 23% of CSWs reported that they have children to support, while the rest do not have any children.

- Education

Two hundred forty CSWs (or 50%) are illiterate, 174 (or 36.3%) have attended primary school and the rest (13.8%) have attended secondary school.

Fig 4.1: The education of CSWs



2. Brothel dynamic

-Time involve in prostitution

Table 4.11: Time involve in prostitution in five provinces

Provinces/cities	PP	SHV	KPC	RTK	BTB	ALL
< 3 month	24.2%	33.9%	51.8%	20%	29.2%	34.8%
3-6 month	52.5%	46.8%	33.9%	50%	40%	41.1%
>6 month	23.3%	19.3%	14.3%	30%	30.8%	24.1%
Mean	4.8m	5.4m	3.4m	5.4m	6.8m	5.1m
S.D	5	7.6	3.1	3.3	8.9	6.1
Range	2d-3y	11d-6y	2d-1y	1d-1y	2d-4.7y	1d-6y
Mode	3m	1m	3m	5m	1m	3m

Table 4.11 illustrated that 34.8% of CSWs has been involved in prostitution less than three months, 41.1% has been involve between 3-6 months and the other 24.1% has been involved more than 6 months. The mean time of CSWs involved in the prostitution is 5.1 month.

-Causes of the involvement in prostitution

Human trafficking and poverty are the main causes which make young girls work in the brothel for selling sex. Answer to the question about the reason that causes them to be CSWs, 25.2% reported they were sole to the brothel owner , 28.1% reported they face with poverty, 10.7% reported they was divorced, 6.8% reported they have family problem and the rest were caused by other issues.

-Sex price

Sex price of CSWs in the five provinces vary from 5000 to 27000 Riel (or from about 2 to 10 US Dollars). More than half of them reported that their sex price is 5000 Riels (or about 2 US Dollars).

-Average number of client per day

The average number of client received per day per one CSWs is 3.7 while the rang vary from 1 to 10 clients. In Kampong Cham, the average number of client per day per 1 CSW is highest, and in Ratanakitri is lowest.

Table 4.12.: Average number of client per day per CSW

Provinces/cities	PP	SHV	KPC	RTK	BTB	ALL
Mean	3.9	3.3	4.3	2.7	3.8	3.7
S.D	1.9	1.6	2.7	.6	1.8	1.9
Range	1-12	1-10	1-15	2-4	1-10	1-15
Mode	3	3	3	3	3	3

-Indebted to the brothel owner

About 46.1% of CSWs enrolled in the study reported that they are indebted to the brothel owner. When CSWs is indebted to the brothel owner, she will never allow to go outside the area where she works. Those CSWs must work in the brothel until they can clear the debt.

3. Knowledge, Attitude, Belief and Practice

1.Practice

a.Condom use

Number of client received and number of condom used in the past 24 hours

The average number of client received in the past 24 hours per CSWs is 3.3 (which is similar to average number of client per day) and the number of condom used in the past 24 hours is 3.1 . In Battambang, the average number of condom used in the past 24 hours with client is lower than other provinces.

Table 4.13 :Average number of client and number of condom used in the past 24 hours

Provinces/Cities	PP	SHV	KPC	RTK	BTB	ALL
# average client per day	3.9	3.3	4.3	2.7	3.8	3.7
# client in past 24h	3.7	2.7	3.7	1.7	3.5	3.3
# condom used past 24h	3.6	2.3	3.5	1.7	3	3.1

Condom use with last 10 clients

Condom use with last 10 clients was found higher in Phnom Penh, Kampongcham, and Rattanakiri which are 9.34, 9.16 and 9.2 respectively, while in Sihanouk Vile and Battambang were low, 8.1 and 8.0. The total mean of condom use with last 10 clients is 8.83.

Table 4.14: The rate of condom use with last 10 clients

#condom use	PP	SHV	KPC	RTK	BTB	ALL
Mean	9.34	8.10	9.16	9.2	8	8.83
S.D	1.12	1.87	1.20	1.10	1.56	1.52
Range	3-10	1-10	6-10	6-10	5-10	1-10
Mode	10	10	10	10	9	10

The frequency of condom use

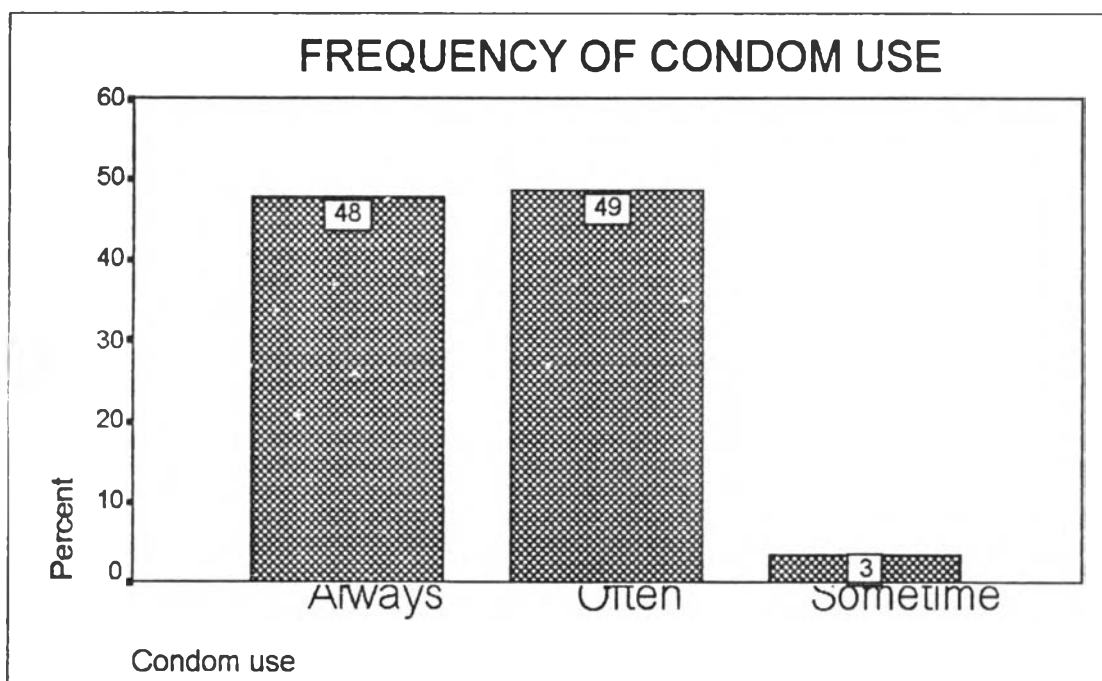
CSWs were asked about how often they used a condom with their client. 230 (or 47.9%) said they used a condom all the time, 234 (or 48.8%) said they often used a condom and the rest 16 (or 3.3%) said they used a condom sometime only. None of them reported they never used a condom with their client.

The following table shows the frequency of condom use in different provinces. The rate of *Always use* in Phnom Penh, Ratanakiri and Kampongcham are much more higher than those in Sihanouk Vile and Battambang.

Table 4.15 : The frequency of condom use in five different provinces

Frequency	PP	SHV	KPC	RTK	BTB	ALL
Always	63.7	27.2	53.6	70	17.9	47.9
Often	33.2	71.9	42.9	30	73.1	48.8
Sometime	3.1	.9	3.6	0	9	3.3
Never	0	0	0	0	0	0
Total	100%	100%	100%	100%	100%	100%

Fig 4.2: Overall frequency of condom use



Reasons of not using a condom

Out of 480 CSWs interviewed in the study, 460 provides answer to the question asked about the reasons of not using a condom and 19 of them provide 2 or 3 answers. Table 7 lists the frequency and percentage of reasons of not using a condom.

Table 4.16: Reasons of not using a condom

Reasons of not using a condom	Frequency	Percentage
1. Brothel owner warned not to used	3	.7
2. Talented sex client	5	1
3. Client bargaining(resistance)	167	36.3
4. Drunk client	70	15.2
5. Hard to find or buy condom	0	0
6. Condom is too expensive	1	.2
7. Other	214	46.5*
Total	460	100%

*Since this is an open question, there are many answers which it can not be all categorized. Those other reasons of not using a condom include especially reasons from client side which CSWs fail to clarify and this include also the 'Don't know' answers.

b. Sexual Practice

CSWs were asked about their sexual act during the past 24 hours, beside the *Vaginal sex* that every CSWs always performed, 38 CSWs (or 8.9%) reported that they had performed *Oral sex* with their clients in the past 24 hours and only 6 of them (or 1.2%) reported they had *Anal sex* in the past 24 hours.

2. Knowledge

Absolute majority of CSWs interviewed (98.4%) said that they ever heard about disease AIDS, only 8 CSWs (or 1.6%) said they have never heard what is AIDS. Regarding the understanding about the transmission and prevention from HIV infection, 78.3% know that transmission can be made through sexual contact, blood and from mother to child; 18.5% said they don't know and 3.1% have misunderstanding concept. On the other hand, absolute majority of them(91%) know that condom can be used to prevent the transmission of HIV/AIDS.

CSWs were also asked whether AIDS patient can be cured, 360 (or 75%) said no, 22 (or 4.6) said yes and the rest 20.4% said don't know.

3. Attitude and belief

The following table illustrate the answers of CSWs to test their attitude and beliefs regarding HIV/AIDS in their work.

Table 4.17: Attitude and belief regarding HIV/AIDS

Statements	Strongly disagree	Disagree	Uncertain	Agree	Strongly agree	Total
1. HIV/AIDS is a big problem as media and health worker said	.4%	1%	10%	39.7%	48.8%	100%
2. I am afraid of getting AIDS	.6%	1.5%	4%	31.3%	62.3%	100%
3. I'm a kind of person who is likely to get AIDS	1.5%	3.8%	28.2%	34%	32.6%	100%

Answer to the question about whether they accept to have sex without using a condom with client who pay double fee, 74.2% of them said no while other 25.2% said yes.

4. Self-reported symptoms on STD and seeking treatment

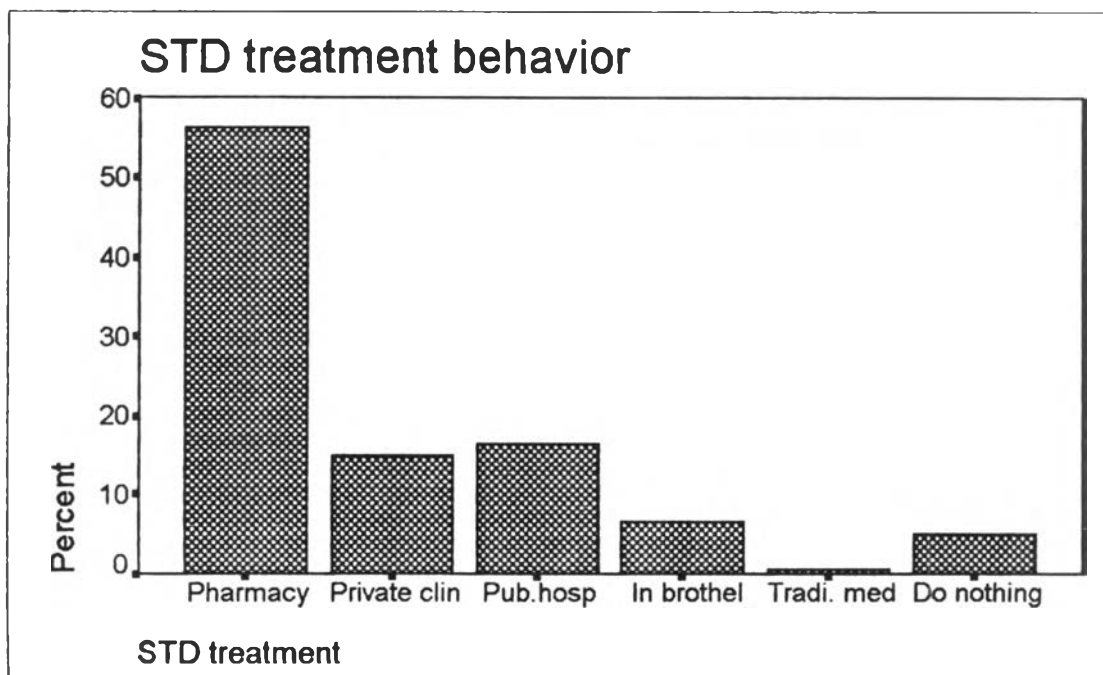
-Having STD symptom in past month

CSWs were asked about experience in STD symptom in past month such as pain in urination, abnormal vaginal discharge, and genital wart. 156 (or 37.7%) of them said they ever had pain in urination in past month (rang from 1 to 7 times), 225 CSWs (or 54.4%) said they ever had abnormal vaginal discharge (ranged from 1 to 10 times) and 39 CSWs (or9.4%) said they ever had genital wart in past month (ranged from1 to 4 times).

-Seeking treatment of STD symptoms

Answer to the question about where they first go for treatment the last time they had STD symptom, only 361 CSWs who ever had STD symptom provide the answer. 202 (or 56%)reported they bough drug at the pharmacy, 59 (or 16.3%) reported they went to public hospital (STD clinic), 54 (or 15%) reported they went to private clinic, 24 (or 6.6%) reported they were treated in the brothel, 2 (or .6%) reported they used traditional medicine, and 18(or 5%) reported they did nothing with the symptom.

Fig 4.3: Seeking treatment the last time they had STD symptom



-Pregnancy and abortion

CSWs were asked if they ever had pregnancy since starting to sell sex to client, only 406 gave the answer in which 67 of them (or 16.5%) said they ever had pregnancy. On the other hand, there were 356 CSWs provided respond to the question about abortion. 74 CSWs or 21% reported they ever had abortion which is ranged from 1 to 5 times.

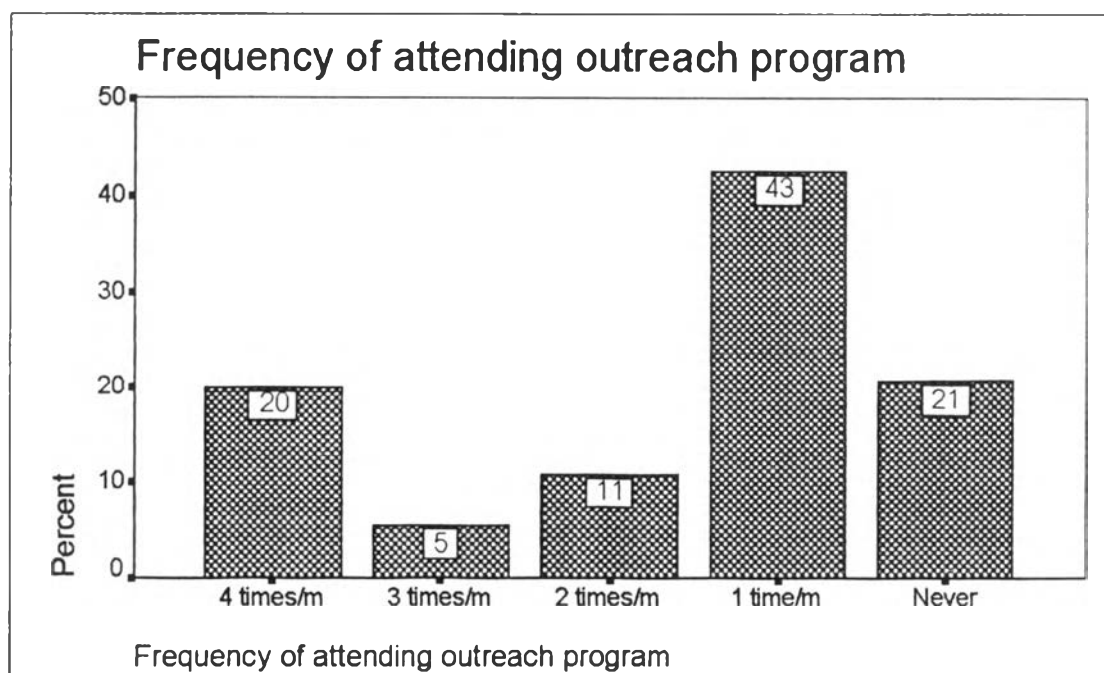
5.Frequency of attending the Outreach program

Table 4.18: Frequency of attending outreach program in five provinces

Frequency	PP	SHV	KPC	RTK	BTB	ALL
1. Once a week	33.3%	.9%	9.1%	75%	0%	19.9%
2. 3 times a month	9.9%	1.8%	1.8%	0%	1.5%	5.5%
3. 2 times a month	9.5%	8%	20%	5%	13.4%	10.9%
4. 1 time a month	27.9%	68.1%	47.3%	10%	55.2%	42.8%
5. Never	19.4%	20.4%	21.8%	10%	29.9%	20.8%
TOTAL	100%	100%	100%	100%	100%	100%

Table 4.18 showed that outreach program to direct commercial sex worker cover only about 80% of CSWs and most of them reported they had attended outreach program once a month. Moreover, the percentage of CSWs reported attending outreach program once a week is high in Phnom Penh and Rattanakiri.

Fig 4.4 : Overall frequency of attending outreach program



4.2.2. OUTPUT AND OUTCOME OF OUTREACH PROGRAM

1. Output of outreach program

Like other programs, outreach program began by recruiting staffs and providing training for long term period. Then IEC materials were produced and distributed accordingly in order to support the performance of the program. The immediate program output obtained at program level are two, first is number of staffs trained which consist of outreach worker, health educator, Peer educator; and number of materials developed, second is the number of CSWs educated by the program.

As a result, outreach program produced total 114 staffs which consists of :

- 2 staffs at national level (1 outreach workers and 1 health educators)
- 44 staffs at provincial level (22 outreach workers and 22 health educators)
- 68 Peer educators

Table 4.19 showed the distribution of staffs in each province and cities which vary according to the size of the province.

Table 4.19: Staffs of outreach program and number of CSWs educated

Province/Cities	Outreach worker	Health educator	Peer educator	#CSWs educated
1. Phnom Penh	1	1	6	774
2. kandal	1	1	5	124
3. Svay Rieng	1	1	4	73
4. Prey Veng	1	1	4	131
5. Kampong Cham	1	1	4	195
6. Kampong Chhnang	1	1	4	240
7. Pursat	1	1	4	161
8. Battambang	1	1	4	230
9. Koh kong	1	1	4	84
10. Stung Treng	1	1	3	71
11. Kampong Thom	1	1	3	105
12. Banteay Meanchey	1	1	3	500
13. Siem Reap	1	1	3	182
14. kampong Speu	1	1	3	153
15. Takeo	1	1	3	121
16. Kompot	1	1	2	200
17. Sihanouk Ville	1	1	2	395
18. Kratie	1	1	3	89
19. Rattanakiri	1	1	3	70
20. Preah Vihea	1	1	1	41
21. krong Kep	1	1	0	0
22. Mondul Kiri	1	1	0	6
23. National AIDS Program		1	1	0
Total	23	23	68	3,945

IEC materials are very important for supporting the performance of the program. Some materials were produced at the beginning of the program, such as bag, flipchart, T-shirt, cap, penis model and so on. However, some materials were produced according to time and need such as leaflet and poster. Condom used in the program were imported from Thailand which were always available at any time. The following table showed the number of materials produced and condom distributed within first year of the program.

Table 4.20 : IEC material and condom used in first year of intervention

IEC materials	Amount	type	Total
1. Penis model	114	1	114
2. bag	114	1	114
3. T-shirt	228	1	228
4. cap	228	1	228
5. flipchart	114	1	114
6. poster	2,428	3	7,284
7. leaflet	5,230	6	31,380
8. condom	1,514,880	1	1,515,880

2. Outcome of outreach program

1. Predictors of condom use

The health belief model, which posits that health belief determine health behavior, has been used to predict AIDS related risk behavior risk reduction. It proposes that knowledge about AIDS, perceived efficacy of preventive behavior and empowerment of outreach program predict safer sexual behavior of CSWs.

Table 4.21 : Predictors of condom used of CSWs

Predictors	Chi-square	P value
1. Age	3.20091	.52478
2. Marital status	4.36706	.22446
3. Children to support	3.09439	.37730
4. Education	6.43719	.04001*
5. Time involved in prostitution	7.66581	.02165*
6. Number of client/day	6.51903	.03841*
7. Experience in STD	7.85344	.01971*
8. Indebted to brothel owner	2.99270	.70111
9. Sex price	4.75484	.09279
10. Experience in pregnancy	.64617	.72391
11. Ever attending outreach proram	4.43809	.03515*

* Significant (P< .05)

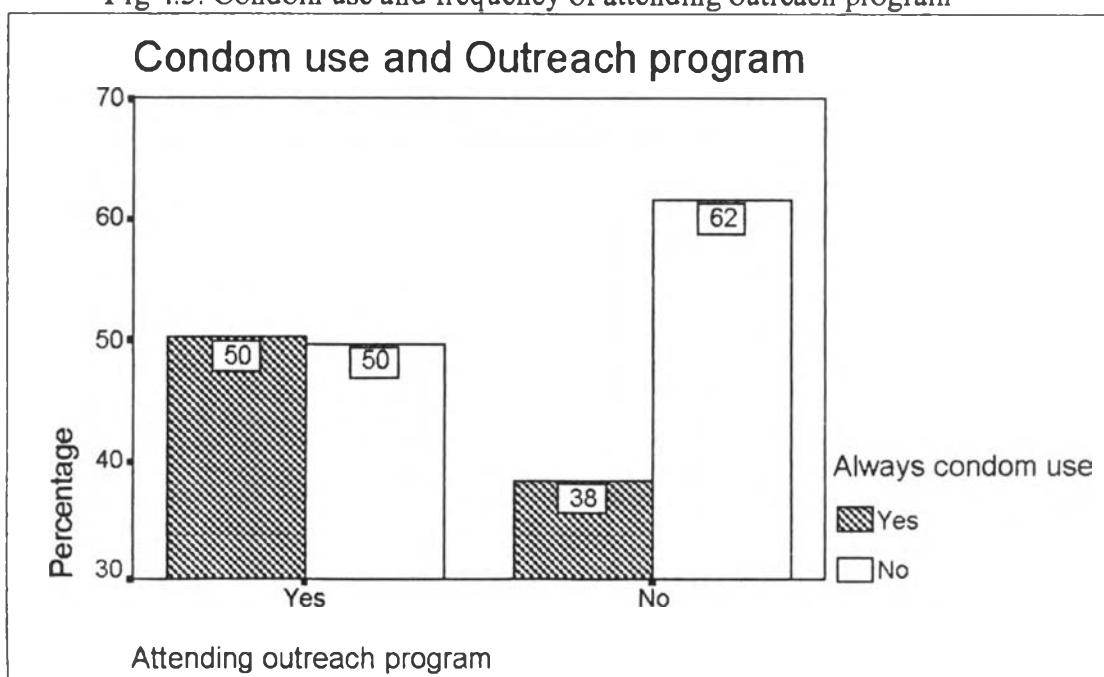
The association of these factors, together with sociodemographic factors and other specific to CSWs, with reported frequency of condom use, were examined using Chi-square. Concerning sociodemographic, condom use were unrelated to age, marital status, or number of children; but it were related to education. Regarding factors specific to commercial sex worker, condom use was related to time involve in prostitution, average number of client per day, and experience in Sexual Transmitted Diseases; but it was unrelated to indebted to brothel owner, sex price, experience in pregnancy or knowledge about AIDS. The association between condom use and frequency of attending outreach program was significant.

2. The level of change in condom use

The assessment of goal achievement, which is the outcome of outreach program, can be done by comparing the change of knowledge, attitude, belief, behavior and practice between CSWs who have educated by the program and those who have not.

Since the purpose of the study is to look at the outcome in term of change of behavior regarding condom use (% of CSWs always used condom), we compare the % of always condom use of CSWs who have ever attended the outreach program session and those who have not.

Fig 4.5: Condom use and frequency of attending outreach program



Out of 480 CSWs interviewed in the study 378 (or 79.2%), reported they have ever attended the outreach program session, and 99 (or 20.8%) reported they have never attended any session of outreach program. As a result we found that among 378 CSWs who have attended outreach program, 190 (or 50.3%) reported they always used condom with client, and on the other hand, 38 CSWs(or 38.4%) among 99 who have never attended outreach program reported they always used condom with client . Chi-square test found that there is a significant association between the level of condom use and outreach program session but not depend on how often they attended the Peer education session ($X^2 = 4.43809$, P value=.03515).

In table 4.22, the comparison of frequency of condom use between two groups of CSWs who have attended outreach program and those who have not, found there is 12% (50.3%-48.4%) different. From data collection, the test for association between frequency of condom use and frequency attended outreach program at 5% level of significant, we found that both factors are statistically significant related. This means that ever and never attend outreach program has relationship with frequency of condom use.

Table: 4.22. 'Frequency of condom use' by 'ever attended outreach program'

		Frequency of condom use		Total
		# or % of always used	# or % of not always used	
Ever attended	Yes	190 or (50.3%)	188 or (49.7%)	378 or (80%)
	No	38 or (38.4%)	61 or (61.6%)	99 or (20%)
Total		228 or (47.8%)	249 or (52.2%)	477 or (100%)

-The Chi-square= 4.43809 , and P value= .03515

3. Externality on condom use

The study found that the overall percentage of 'always condom use' of CSWs is 47.8% (which 50.3% for those who have educated by the program and 38.4% for those who have never attended outreach program). Comparing the rate of condom use of CSWs of this study with the result of the study a year before by Ryan and Gorbach, found that the 'always condom use' among CSWs increase from 15.7% to 50.3% (or 34.6% increase), but the increase of condom use which is related to outreach program

is just only 12%. This may explain that the externality influenced the outcome of the program is higher than what the program has achieved.

There are many externalities that may influence the condom use of CSWs which we are going to highlight some important. First is social norm (social norm about condom use) which is strongly influenced the individual behavior of CSWs. When the strength of social norm is strong, the individual knowledge will make little difference (Hornik, R., 1991). CSWs expose to this effect through mass media such as Radio, TV and newspaper, and observation from others especially from their friends. Second is availability of condom, usually CSWs who attended outreach program session received free condom which encourage them to use condom more than those who did not attend outreach program session. Third is behavior of clients, which have strong impact on the decisions of condom use. Although the study found that the reasons of not using a condom was 51.5% due to client resistant and client drunk, the decisions of using a condom were initiated by clients. Finally, the contamination of other interventions have also strong impact on the condom use of CSWs, which need to be considered by all researchers who try to measure the effect of the specific intervention. Those contamination could cause by other interventions such as Condom Social Marketing of NGOs, counseling services of STD clinic, HIV testing center, and health care workers in both private and public health facilities.

This study can not eliminate or minimize the externalities that affect the outcome of the outreach program, but we can conclude that the difference in condom use between two groups of CSWs, those who have ever educated by the program and those who have not, is statistically significant related to the activities of outreach program.

4.3 COST RATIO OF OUTPUT AND OUTCOME OF OUTREACH PROGRAM

Unlike the other cost-effectiveness studies which measure the cost effectiveness ratio of different alternative interventions then make comparison in order to determine which intervention is the most cost effective to implement, this study analyzed one intervention without comparison to others. However the result of the study could provide to those who attempt to use in their own cost effectiveness comparison.

Since the aim is to improve the management of the existing program, the cost and performance of the existing intervention could be analyzed to generate ideas of possible suitable alternatives.

As we have already mentioned in the conceptual framework of previous chapter that the ultimate analysis will be the estimation of cost per unit of output and

outcome contributed to outreach program after one year of implementation. The output of outreach program, which is highlighted for the analysis, is the number of CSWs educated. The total number of CSWs educated by the program countrywide (or 20 provinces and 2 major cities) was 3945. The outcome related to outreach program which was measured in previous chapter is the increase in number of condom use (always condom use) which is the change in sexual practice toward safer behavior that could prevent from HIV/AIDS and STD. As a result, amongst 3945 CSWs educated by the program, 50.4% (or 1988) reported they always used condom with their client. Comparison the frequency of condom use (always used) between two groups of CSWs, those who have attended outreach program and those who have not, found that there are 12% increase in condom use which is related to the effort of outreach program.

- Cost per 1 condom distributed is 246 Riels or .09 US dollars
- Cost per 1 CSWs educated by outreach program per year is 94,434 Riels or about 35 US dollars (total cost/ total number of CSWs educated).
- Cost per increase 1 CSW in always condom use contributed by outreach program is 786,952 Riels or about 289 US dollars (total cost/ number of increase CSWs always used condom contributed by outreach program)
- Cost per one percentage increase in always used a condom is 3,104,528 Riels or about 11,413 US dollars (total cost/ 12% increase in always condom use)

Table 4.23 : Cost ratio

Cost Ratio	Riels	US dollars
1. C/1 condom distributed	246	.09
2. C/1 CSW educated/year	94,434	35
3. C/increase 1 CSW in always condom use	786,952	289
4. C/ 1% increase in always condom use	3,104,528	11,413

4.4. COMPARISON COST RATIO

Cost calculation of the first year of outreach program is one part of the study and it was found that 85.6% of total expenditure was on recurrent costs and 14.4% were spent on capital cost. The majority of spending were on personnel (43.8%) and on condom (29.1%), and total cost of outreach program is sensitive to the number of staffs and number of CSWs trained. Although the total annual costs of the program is 136,964 US dollars (or 372,543,390 Riels), cost per CSWs educated per year is low compare to the costs of sex workers program in Nairobi, Kenya, which was 70,000 US dollars for annual operating costs and 140 US dollars per CSWs educated per year (Moses and others 1991).

4.5. SUSTAINABILITY OF OUTREACH PROGRAM

The analysis of sustainability of outreach program depend on two dimensions, performance and financial viability.

4.5.1. Performance of the program

As we have already mentioned in previous chapter, during one year of implementation, outreach program to female sex worker in Cambodia provided their education to total 3945 CSWs in all provinces and major cities, and as a result it increased condom use in CSWs (always condom use) by 12% which is very challenging result. The cost of education per head per year is 94,434 Riels (or about 35 US dollars) and additional cost per increase 1 CSW in always condom use contributed by outreach program is 786,952 Riels (or about 289 US dollars) . Although unit cost of output and outcome contributed to outreach program seem high compare to the other health education program, it is worthwhile to continue the program because the benefit in term costs saving generated from people who avoid from HIV infection are huge.

4.5.2. Financial viability

Outreach program to female sex workers in Cambodia was implemented by government body which consists of national and provincial levels, but the financial contributor were three different groups such as government body (Ministry of Health), international donor (WHO) and Non-governmental-organization.

The following table show that, majority of fund (74%) came from international donor which covered the fundamental part of expenditure such as salary, training, supervision, evaluation, IEC materials, condoms and vehicle. The government body, on the other hand, contributed about 21% of total expenditure which was used as complementary to the fund provided by donor. This fund was spent mostly on building, maintaining and operating capital items, and some part of personnel expenditures. Usually the expenditures contributed by government body were not mentioned in the budget plan of the program. Finally the other 5% of total expenditure were contributed by Non-governmental-organization which is also complementary to the fund provided by international donor. In Cambodia there are many NGO involved in HIV/AIDS prevention and control program. Most of them involved directly in the activities of the intervention, some are just provide financial support to those who implement the program especially government body. There are several NGOs provided their supports to outreach program to produce more IEC materials such as leaflet and poster in order to make the program more attractive to CSWs.

Table 4.24 : Flow of funding of outreach program to female CSWs in Cambodia

Cost items	Donor	Government	NGO	Total
1.Recurrent cost				
-Personnel	139,397,280	24,030,200	-	163,227,480
-Supplies	114,936,320	-	20,031,576	134,967,896
-Operating &maintaining	-	20,859,200	-	20,859,200
2.Capital cost				
-Vehicle	11,678,393	-	-	11,678,393
-Equipment	3,560,037	-	-	3,560,037
-Building	-	32,313,600	-	32,313,600
-Training	3,940,259	1,796,525	-	5,736,784
Total	273,512,289	78,999,525	20,031,576	372,543,390
Percentage	74%	21%	5%	100%

Unit: Riel

Although we found that outreach program to female sex workers in Cambodia is likely success and worthwhile to continue its implementation, there is no way that this program could be sustained without financial support from international donor, because donor contribute the fundamental part of total expenditure (74%) of the program while government and NGO could contribute a complementary part (26%), and cost-recovery is not feasible for outreach program to extract any fee from individual(CSWs) when services were provided with even low cost per head.