



**Low cost - High Impact: Reduction of disease through hygiene behaviour change in Vietnam through Community Health Clubs.**

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## 1. BACKGROUND

### 1.1. Water and Sanitation Sector in Vietnam

To achieve MDGs by 2015, The Government of Vietnam initiated the National Target Program (NTP) of rural water supply and sanitation from 2011. By the end of 2010, after NTP1 (2001-2005) and NTP2 (2006-2010) rural water supply household coverage was more than 83% but rural household sanitation was only 60% failing to achieve set target of 70%. To achieve set target of NTP3 that 75% rural households have toilets by 2015, the Ministry of Health, the body responsible for rural sanitation component of NTP in Vietnam is concerned that in order to improve family health a stronger emphasis on sanitation and hygiene behaviours is needed to galvanise communities to improve their living standards. A number of promising behaviour change methodologies have been developed since 2000 in order to promote sanitation and hygiene including, Community-Led Total Sanitation (Kar, 2008) which concentrates on sanitation (mainly open defecation), and Social Marketing (Curtis, et al. 2001) focusing mainly on handwashing and the Community Health Club Approach (CHC) (Waterkeyn, 2010) which includes not only water, sanitation, and hygiene but all common preventable diseases. This research summarises the outcomes of a pilot project to field test the Community Health Club Model that has been undertaken in four provinces, but further research is needed as it scales up to compare it's cost-effectiveness to other methodologies. Rates of sanitation and hygiene practices are considered low in rural Vietnam, and although 75% of rural households have latrines, only 18% of those in rural households meet government hygienic standards (MARD, 2011). In terms of hygiene, only 15.6% of surveyed householders and 11.5% of school students wash hands with soap after defecation. Ethnic minorities such as the Thai are at higher risk, with less than 4% having access to hygienic latrines and less than 6% washing hands with soap after defecation.

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### **1.2. Making PHAST faster**

The Participatory Hygiene and Sanitation Transformation (PHAST) methodology (Srinivasan, 1990) was used in Vietnam in the 1990's. Although there were many positive aspects in terms of empowering a community with analytical skills, many concluded that it had largely failed to produce any substantial hygiene behaviour change. This was confirmed in a Tanzanian Study (Malabo, H et al., 2007) and in Uganda (WSP-PGA, 2005) which both concluded that there was no significant difference in the PHAST and non PHAST areas on handwashing practices and other simple hygiene behaviour. One of its failings was due to the fact it was too open ended, and did not target a specific group of people, but rather the village in general. To rectify this perceived difficulty, the Community Health Club (CHC) Approach used a more structured group that provided the missing link, converting group analysis into group consensus and decision-making, thereby enforcing individual action by positive peer-pressure (Waterkeyn, 2003). CHCs were shown to stimulate hygiene behaviour change at impressive rates, not only in Zimbabwe (Waterkeyn & Cairncross, 2005) but wherever the Model was tried subsequently in East Africa (Okot et al, 2005), West Africa (King & da Santos, 2007; CARE, 2005), and South Africa (Rosenfeld, 2009). The model has been recognised internationally as an effective strategy to change behaviour (Mara et al., 2010; John Hopkins / Cranfield, 2010; Poverty-Environment Partnership (2008). However, until now, CHCs have been used as a vehicle for development exclusively in Africa, and it is this adaption of the model for Asia that makes this pilot project in Vietnam of interest. This research explores whether the CHC Approach in Vietnam can succeed to change hygiene behaviour as cost - effectively as in Africa.

### **1.3. The Community Health Club Approach**

The underlying assumption of the CHC Approach is that people worldwide naturally want their children to survive and prosper and that the Vietnamese would respond to the CHC approach with the same enthusiasm as people do in Africa, as it would give them the opportunity to learn and change their lives. Evidence from CHCs in Zimbabwe shows that women in particular have a

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strong respect for knowledge and this drive to learn, due largely to lack of opportunity for self-improvement in the rural areas, ensures high levels of attendance (Waterkeyn, 2011). Lack of information is contingent on level of education and literacy so it is important to ascertain these levels in order to pitch the training at the appropriate level of information. In Vietnam the average adult literacy rate is 94%, with 96.1% for males and 92% for females (2009) which slightly higher than in Zimbabwe (2003) with an average of 90.7% for the adult population, with 94.2% for men and 87.2% for women above 15 years (Indexmundi, 2011). As there are higher levels of education and living standards in Vietnam, the CHC Approach it was a concern that this level of community training could be too basic for rural Vietnamese.

Parents in Africa have shown that they value knowledge (Waterkeyn & Waterkeyn, 2012) so as to ensure they have the ability to manage all printable diseases: not only those that cause infant and child death (diarrhoea, dysentery, cholera, HIV/AIDS and mosquito borne disease), but also minimize other common diseases that cause morbidity and decrease productivity such as intestinal parasites, schistosomiasis, acute respiratory infections, skin (scabies, ringworm), and eye diseases (trachoma). All these common diseases can be controlled by families no matter how poor, with their own efforts, and at very little cost, simply by practicing safe hygiene. The literature shows that safe hygiene, water and sanitation can eradicate diarrhoea (Feachem, 1985) and reported cases at health centres would be expected to decrease significantly in areas that are sufficiently saturated with Health Clubs. As a sole intervention, health promotion that achieves safe hygiene behaviour is more effective than either improved water quantity, quality or sanitation supply by decreasing not only diarrhoea but ascariasis, dracunculiasis, hookworm and schistosomiasis (Esrey et al, 1991). It has now been established that handwashing with soap apart from decreasing diarrhoea by 47%, can also decrease the transmission of Acute Respiratory Infections (ARI) (Curtis & Cairncross, 2003) because germs spread by hand contact as well as through the air.

The CHC Approach aims to develop an active club of committed members in every village who have the mandate to manage environmental health, and encourage community hygiene through

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practices that can be controlled locally. Regular weekly meetings are held, which seek to attract at least 80% of the households in a consistent group effort to improve standards of living. Within the Club, a sense of identity, combined with a dedication to standards and norms of hygiene behaviour, is promoted by the group. Consensus and positive peer pressure to conform to common hygiene standards is the mechanism for change.

## **2. IMPLEMENTATION OF THE PILOT PROJECT**

The Ministry of Health in Vietnam decided to pilot the CHC Model to ascertain whether it was indeed appropriate for Vietnam, with an ability to stimulate a demand for sanitation and behaviour change, being as cost-effective in Asia, as it is in Africa.

In three Northern Provinces, (Son La, Phu Tho, and Ha Thin), communities were mobilised and 12 CHCs were started in one district of each province, with six CHCs in two purposely selected communes. Village Health Workers (VHWs) were the primary CHC facilitator with strong support and supervision from the Commune Health Workers (CHWs). The Departments of Preventive Medicine and Environment (now is Health Environment Management Agency – VIHEMA) at central and Preventive Medicine Center was the lead implementing agency at Province and District level. At Commune level, the Commune People's Committee was the lead implementing partner.

### **2.1. Mobilisation of the Community**

In order to fully test the CHC approach the Provinces had been asked to choose their most challenging areas, where hygiene levels were the lowest. In the North West, in Son La Province, the CHC consisted of mainly Thai ethnic group who lived in mountainous terrain having to walk far to CHC Meetings, therefore the size of club tended to be smaller, but no less enthusiastic than in the other two Provinces where access by road, usually by motor bike, made gathering the community much easier. However in the lower farming areas, people were busy all day and CHC meetings tended to be at night. This was made easier by the facility of the Culture House in each village, with electricity. Meetings were also an opportunity for communities to socialise and sing,

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as well as learn. Every day Social Marketing was done with 'propaganda' messages that were broadcast on the public announcement system to encourage people to join and the weekly meeting were also often relayed over the village by loud speaker which meant that non-members were also exposed and this could have a ripple effect of the knowledge being provided in the CHC meeting. Considerable amounts were spent on large billboards erected in each of the communes, showing key messages.

The Mobilisation Strategy that was used to get CHCs started, was to use the existing 'Mass Organisations' (Women, Youth and Farming groups) as they are the main implementing partners on the ground. The proposal for starting a CHC in the village was taken to the commune committee and approved at commune level. They then organised a community meeting in the village and informed people of the objectives and formed an action plan as to how to proceed. An Executive Board was established in each village, with the Chairman being the Head of Commune, and the Board consisting of the Vice Chairman of the People Communes, and Chairpersons from each of the mass organisation.

## 2.2. Size of CHC and Coverage

By the time of this research there were a total of 48 CHCs in the three provinces, with 2,929 members, with an average of 63 members per club. Taking an average of 4.5 people per family, this amounts to an estimated 12,784 beneficiaries from this Pilot Project.

- **Phu Tho** had 24 CHCs with **1,320** members: 3 out of 23 three communes were covered.
- **Ha Tinh** had 12 CHCS in 18 villages with **829** members: 36% coverage in 2 communes.
- **Son La** had 12 CHCs in 55 villages with **780** members: 21% coverage in 2 communes

## 2.3. Training Material

The CHC training usually depends on a large array of visual aids. This 'toolkit' is developed specially for the CHC programme and in Vietnam consisted of a card set of 10-20 cards for each

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of the 20 health topics, one per session. However, the timing was poor, as the CHCs started up in mid 2010 although the training materials were only distributed to the provinces March 2011, which meant that none of the facilitators had used the correct visual aids for the training. In Son La and Phu Tho, some facilitators used the old PHAST Tool Kits which were appropriate when focusing on diarrhoea and sanitation. In Ha Tinh the new draft Tool kit was printed in colour, and the flip chart on handwashing from the Unilever programme was useful to reinforce messages. This consisted of posters, billboards and a flip chart on diarrhoea. Based on observations of the six health clubs visited, it appears that although the facilitators did try and use the participatory approach by dishing out the cards for people to explain, there was still a strong didactic tendency to lecture the audience and be the teacher.

#### 2.4. Community Response

When asked to judge the popularity of the CHCs on a scale from 1-10, in a structured interview by health officials, the response from the Community was rated as good with 8 in Son La, 7 in Phu Tho, and very good with 9 in Ha Tinh.

Ha Tinh officials reported that the community *'have better relationships with each other, and exchange information, do village clean ups, have better coordination and help improve knowledge and awareness.'*

Phu Tho officials said, *'the CHCs are very popular because people do it voluntarily, they vote for the committee and they organise it all themselves...more focus on the practical and more participation. They don't rely on the facilitator so it is a two-way team work and promotes a good spirit.'*

Son La officials reported: *'We are very satisfied with the changes and expect that it can be replicated to other districts. With experience it has improved knowledge and skills, not only for*

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*district but also for provincial staff. Before we had to deal with health promotion but not in a professional way, no materials, so after CHC training we know how to do it.'*

PROVINCE	Son La	Phu Tho	Ha Tinh	TOTAL
Total population of Province	1,083,800	1,316,700	1,230,300	3,630,800
Total number of Districts	11	13	11	35
<b>DISTRICT</b>				
Selected CHC District	Muong La	Thanh Son	Thach Ha	3
Area of District	543.6m <sup>2</sup>	1309km <sup>2</sup>	399km <sup>2</sup>	
Population of selected District*	74,668	187,700	182,120	
Person per km <sup>2</sup> (density)	76	373	204	
<b>COMMUNE</b>				
Number of communes in selected district	16 out of 206	23	31	70
Selected CHC communes	Muong Bu Muong Chum	Thuc Luyen Dich Qua Thach Khoan	Thach Hoi Thach Thang	7
Total population of CHC Communes	15,932	17,779	15,000**	48,711
<b>VILLAGE</b>				
Number of CHC villages in CHC communes	12 out of 55	24	12 out of 18	48
Main Ethnic group	85% Thai	59% Muong	90% Kinh	
Total population of CHC villages	15,932	17,779	10,812	44,523
Total number of households	3,459	3,918	2,360	7607
Average number per household	4.6	4.5	4.5	4.5
<b>COMMUNITY HEALTH CLUBS</b>				
Total number of CHCs	12	24	12	48
Number of CHC members	780	1,320	829	2,929
Number of beneficiaries	3,588	5,940	3,730	13,258
Average number members per CHC	65	55	69	63

**Table 1: Demographic Information of Community Health Club Pilot project in 3 Provinces of Vietnam**



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\*GSO Vietnam (2009) \*\* info not available: to be verified (average guess)

## 2.5. Attendance Rates

Spot observations of 6 Community Health Clubs, (two out of 12 in each Province) showed that health club members gathered easily with an average of 63 members. The majority of members were well versed in the key health messages, although the elderly and less educated were more passive, and gender issues were still evident with women very deferential to men who usually controlled proceedings in an autocratic style. It was clear even from this small sample of CHCs that the people had been well mobilised and although there were challenges in the start up. However, once people began to see what went on in the clubs, the numbers swelled, and the popularity of the programme was clearly visible. They also had great enthusiasm for learning, and showed great creativity, producing poems, drama, dance and songs to reinforce the health messages. Levels of knowledge appeared high with no hesitation when asked to explain disease transmission. The use of public announcement system greatly magnifies the dissemination of information outside the immediate walls of the Commune House to the entire village, as even if people don't attend the sessions in person many are exposed to the proceedings.

Normally it is easy to check attendance when visiting CHCs by asking to see the membership cards but as members had not been given membership cards, it was not possible to verify the average attendance with a spot check. However, registers of all members, and their attendance, as well as minutes of every session were kept in a record book and the secretarial standard was high. There was a school-type role call at the beginning of each session, and this is another way of monitoring which is more top-down but a proceeding that Vietnamese are used to.

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**Fig 1: MEMBERSHIP CARD showing Topics of Health Sessions and associated recommended practices**

Number	TOPICS	Signature	Recommended Practices
1	INTRODUCTION		Register as a member
2	COMMON DISEASES		Form a hygiene cluster
3	PERSONAL HYGIENE		Use of soap
4	HANDWASHING		No skin disease in family
5	DIARRHOEA		Correct handwashing
6	DEHYDRATION		Make SSS correctly
7	OPEN DEFECATION		Zero open defecation
8	SANITATION LADDER		A clean covered latrine
9	HYGIENIC LATRINES		A hygienic latrine
10	WASTE COLLECTION		Waste management
11	ASSESSMENT		No littering around home
12	FLY CONTROL		Fly control measures
13	WATER SOURCE		Protected Water Source
14	WATER STORAGE		Safe drinking water
15	INTESTINAL PARASITES		De-worm children
16	FOOD HYGIENE		Clean organised kitchen
17	HOME HYGIENE		Rat control measures
18	COMPETITION		Tidy home and yard
19	RESPIRATORY DISEASE		Fuel efficient stove
20	AVIAN FLU		Improve livestock pens
21	MOSQUITO DISEASE		No mosquito breeding ground
22	REVIEW		Home visit and assessment
23	PLANNING		Future plans
24	GRADUATION		Certificate full attendance

## 2.6. Non Adherence to the Classic CHC Model

It has been emphasised in past programmes that the CHC Model functions best with the use of some key ingredients which are necessary in order to achieve a high level of community response. However in Vietnam there was a variation from the 'classic' model:

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- All programmes in Africa have used a membership card issued to each member at the registration: In Vietnam none of the three project areas gave out membership cards, due to failure of central organisation to have these cards printed.
- Appropriate visual aids are usually considered indispensable in participatory activities, in order to enable visualisation of issues and stimulate discussions: In new Tool Kit of visual aids were still being developed, so if any visual aids were used they were from other programmes or photocopies of the draft Tool Kit in black and white.
- It has been a hallmark of CHCs in Africa that there are public celebrations known as Graduations at the end of each 6 month training to give certificates to those who have completed the 20 sessions. However, no celebrations were arranged for the CHCs in Vietnam and this public recognition was therefore not an incentive.
- Sensitivity to the agricultural season is usually critical in order to get high attendance: In Vietnam this would have been best between March and October, to avoid the monsoons. However in all three areas timing of the Pilot Project was stretched over two years often running through the rains, mainly due to budgetary dictates.
- Based on club size in Africa, the size of the CHC in Vietnam were targeted at around 100 members per CHC: In Vietnam average number of members per CHC were 68: in the mountains areas of Son La, the population density is low, 76 people per km<sup>2</sup>, as opposed to 373 in Phu Tho and 204 in Ha Tinh.

### 3. THE RESEARCH

#### 3.1. Objectives

The main objectives of the research were to evaluate the cost-effectiveness of the CHC pilot model and whether the CHC Approach is culturally acceptable in Vietnam. This was ascertained by asking four key questions:

1. Have CHC member's knowledge improved?
2. Have people improved their hygiene behaviour?
3. Have communicable diseases in the CHC area decreased?

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4. Is the CHC pilot project cost-effective?

### **3.2. Method**

The research was conducted using a combination of following methods:

1. Analysis of the results from each Province of the base line and post line survey which was conducted and collated by MoH.
2. Structured interviews of key informants (MoH district officials)
3. Observation of a sample of six CHCs in action and six individual home visits
4. Reported Cases at clinics in CHC and non CHC areas from Ministry of Health

### **3.3. Sources of Bias and Confounding**

The data from in the household survey was collected by the same Village Health Workers who have facilitated the project, so there may be some interviewer bias, although most were observations rather than theoretical questions, thus verifiable. Enumerators were asked to interview 100 respondents. However, where there were not enough CHC households, they also took non-CHC households and the respondents could not be differentiated in the data. For this reason it is likely that the rate of change within the CHC membership is actually higher than it appears from these statistics, which show a combined level of CHC and non CHC. The standard household survey was adapted to suit each district, which made comparative analysis difficult and as a result data from Son La and Phu Tho could not be used in this analysis. Therefore only data from Ha Tinh District is presented in findings based on the survey, i.e. levels of knowledge and behaviour. The statistics collected from the Health Centres should be impartial in that they record reported cases objectively, without bias towards the objective of this research. The CHCs are not the only health promotion being done, and statistics show that there has been a gradual trend in improvement of most communities in Vietnam over the past five years (NTP2). Therefore to clarify findings we have compared CHC with non CHCs areas as a control for clinical reported cases. In Ha Tinh, Social Marketing Unilever Programme was running for a one year concurrently in all communes, including the CHC communes, promoting handwashing with soap.

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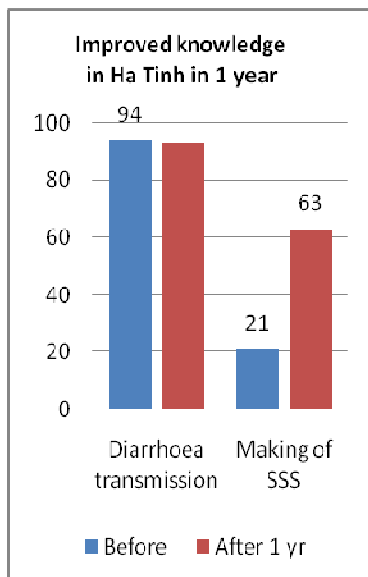
Therefore to avoid confounding and to measure the impact of the CHC *only*, we have sited findings from topics were not included in Unilever IEC material and measure response to these messages. Although the author is the originator of the CHC approach, every attempt has been made to record observable indicators which can be verified empirically. The original data was collected and analysed by each district by Ministry of Health and presented in their annual reports. However to be certain of the quality of the data, only the one district which could provide raw data for the full base line and post intervention survey that could be checked, has been reported in this paper.

### 3.4. Data Collection

The household survey was carried out twice (pre and post) in each of the three Pilot Projects. As all households have been surveyed in each village, there was no sampling thus giving strong statistical validity ( $p > 0.001$ ).

## 4. FINDINGS

### 4.1. Improved Knowledge



*Fig 2: Improved Knowledge in Ha Tinh after one year of health promotion using two indicators. Vietnam, 2010.*

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Between November 2009 and December 2009, the chart (left) shows there has been little or no change in the knowledge of diarrhoea transmission as can be seen the knowledge of this topic was already 94% before the programme. This unexpected finding helps us to unpick the effects of both programmes as it shows that most people already know the cause of diarrhoea, without the help of either the Unilever project (which stressed handwashing with soap to prevent diarrhoea) or the CHC project.

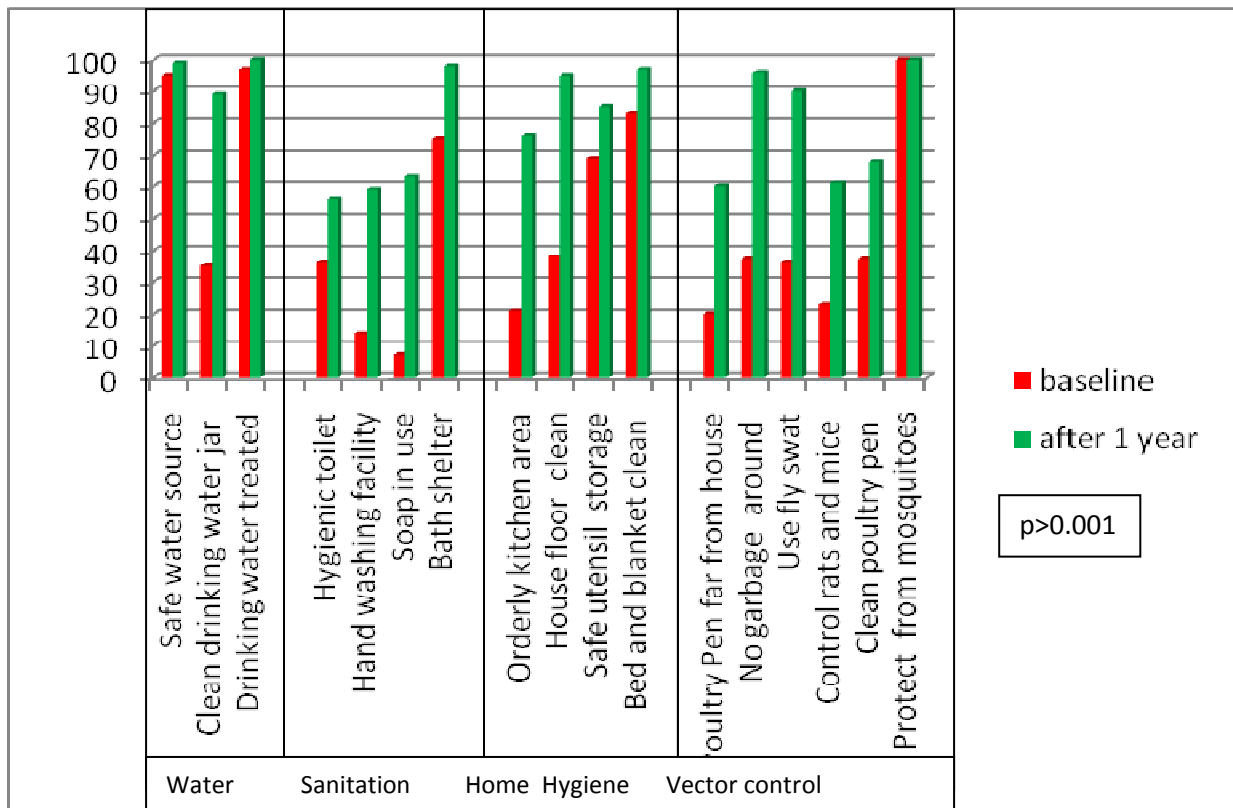
However there has been a significant change (42% increase) in the knowledge of how to make Sugar Salt Solution (SSS) which is a homemade way to treat dehydration that has obviously not been commonly know before the CHCs. This was not part of the IEC content in the Unilever programme.

#### **4.2. Behaviour Change**

In Ha Tinh District, a survey of 7,187 base line respondents, and 1,200 post intervention respondents was undertaken. Taking an average of these 16 indicators we have a 36% behaviour change as measured after one year. There is an increase in safe hygiene in CHC areas in one year in Ha Tinh, with 14 out of 17 proxy indicators being highly significant ( $p > 0.001$ ) and two safe water source and treating drinking water at  $p > 0.05$  significance. Only the use of bed nets for mosquito protection shows no change as it was 100% in both pre and post intervention survey. These three indicators are practices that have already been addressed by previous programmes. However the holistic CHC approach has many other practices that have not been targeted to the same intensity by previous health promotion campaigns and all these show high levels of change in one year. The most extreme change in behaviour is a significant rise of 53% in the use of soap for handwashing.

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Fig. 3. Prevalence of observed proxy indicators of safe hygiene in CHC members after one year of health promotion, in 2 communes of Ha Tinh District, Vietnam. (2009-2010)



Whilst treatment of water and safe water source was already high, the importance of storing water is now understood in the community, and safe practice increased from 35% to 89%, an increase of 54%. With safe water source, safe storage and treatment of water in the home is can be estimated that there is now at least 89% safety on this transmission route.

The level of safe sanitation has been significantly increased with a great effort at latrine construction in the area, especially at the lower end of the sanitation ladder. Whilst hygienic toilets were 35% before the programme, there are now 56% coverage, making a 20% increase. This 20% represents 265 new simple latrines, 71 new composting latrines, 41 Septic Tank toilets and 7 new covered pit latrines.

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Handwashing facilities have increased from 14% to 59%, an increase of 45%, and whereas soap was only in use in 6% of households, it is now used in 63%, an uptake of 57%.

Homes are cleaner as shown by an increase of safe storage of kitchen utensils from 68% to 85% (increased by 16%). Overall there is a 55% improvement in kitchen order from 21% to 76%, and 60% more homes have cleaner floors, a chore that has improved from 38% to 95%. Relating to spread of skin disease, even the cleanliness of bedding was improved by 14% from 83% to 97%.

With so much extra cleaning evident inside the houses it was surprising that these hard working CHC members also had time to clean up their environment. The same pattern emerges: 97% of the houses had no garbage littered around them compared to 36% which were littered in the base line: an impressive 59% change. The survey shows 30% more people (30% to 60%) now use a fly swot, and that 38% more people now practice some form of rat control (23% to 61%).

#### **4.3. Disease Prevention**

Looking at the data from all three provinces for the past two years, the same pattern emerges: there is less diarrhoea, dysentery and food poisoning in all CHC communes, regardless of province. For the sake of brevity we have combined the reported cases of diarrhoea, dysentery and food poisoning (DD&FP) into one total for each commune.

To get the number of reported cases that can be attributed to poor hygiene we subtracted the number of cases in 2010 from the number of cases in 2009.

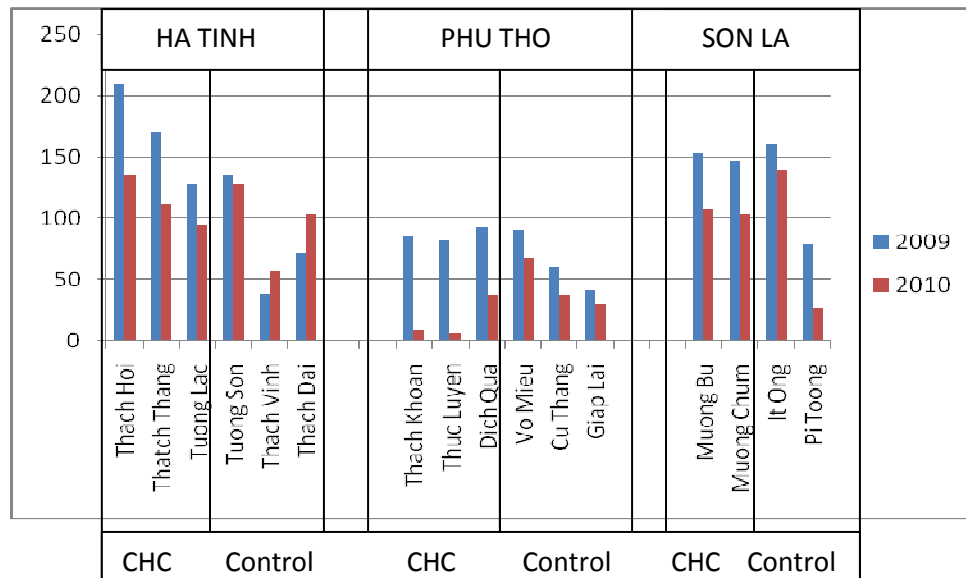
If we compare CHC communes between the three Provinces we can see that Phu Tho, has a much lower number of reported cases of diarrhoea dysentery & food poisoning than Ha Tinh and Son La. Whilst all communes, CHC and non CHC, made some reduction, the CHC communes made a much steeper reduction with an average of 61 saved cases (from 134 to 17 cases in one year) per commune, as opposed to non CHC communes, which reduced on average 24 saved cases per commune (from 99 cases to 75). It should be noted that the communes that were chosen for the CHC pilot project were in all cases the most challenging areas of each district. For



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example, the non CHC commune of Pi Toong in Son La had many fewer cases in the base line and continued to decrease.

Fig. 4. Reduction of reported cases of diarrhoea, dysentery and food poisoning in 7 CHC communes in Vietnam after one year of health promotion activity (2010)



The control communes have not been adequately researched to find out the dynamics affecting behaviour change in non CHC areas, and this is an area that needs to be studied further. For example, two non CHC communes, not included in Fig. 4. above, actually had an increase of reported in cases with Thach Vinh rising from 39 to 57 and Thach Dai rising in diarrhoea reported cases from 72 to 103, despite a health promotion programme using Social Marketing being conducted in this area. By contrast CHC communes without exception showed a dramatic decrease of reported diarrhoea cases in Phu Tho saving approximately 222 cases, reduced by 22% from 284 to 62; Ha Tinh saving approximately 143 cases, reduced 35% from 410 to 267 and Son La saving approximately 94 cases, reduced by 69% from 307 in 2009 to 213 reported cases in 2010.

The reduction of diarrhoea in Son La, can be reasonably attributed to the CHC activity as there were no other health promotion programmes being conducted in the same area, apart from routine instruction at school and in health centres. The cause of the reduction of reported cases

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is not clear: either diarrhoea itself is actually being successfully prevented by safe hygiene, or the reduction may be because people are successfully treating themselves at home, with the knowledge of how to make ORS - either way this is an improvement. Staff from Health Centre expressed the opinion that people are now able to distinguish between when it is necessary to come to the clinic and are able to prevent and treat communicable diseases at home and they attribute this to the CHC training. In the catchment for the commune health centre in Son La 80-90% of the homes are represented in a CHC. It would therefore appear that in Son La reduction of diarrhoea is directly attributable to the CHC. To substantiate these findings, data from similar communes where there are no CHCs was compared and it was found that although there is a steady reduction each year in all communes, there is a much steeper decline of diarrhoea and dysentery cases in the CHC Communes.

There has been a sharp reduction in ARI in Son La, where the cooler mountains mean that people suffer more from respiratory disease than from diarrhoea which is more common in the hot lowlands. The Province reports that ARI decreased in Muong Bu from 78 to 46 cases (41%) and in Muong Chum 37 to 15 cases (22%).

These preliminary findings need more research as there are serious questions to be asked as to the cost effectiveness of Social Marketing strategy which appears to have minimal effect on reducing diarrhoea and dysentery, despite claims that handwashing with soap alone can reduce diarrhoea by 47% (Curtis & Cairncross, 2003). It would appear from these comparative examples that a more holistic CHC approach has added value and impacted on a range of diseases. As only two years were compared, only time will tell if this change can be sustained and the cases continue to decrease. In the Zimbabwe Cholera epidemic of 2008-2009, which took more than 4,000 lives, it was noted by Ministry of health that Makoni district where CHCs had been started a decade before were the most able to contain the spread of cholera by home based preventative measures and were more likely to identify and report cases so enabling early containment. However research showed that those areas where CHCs had been in operation for at least three years, continued to maintain the level of low disease burden after the programme had officially ceased and CHCs were self supporting (Waterkeyn, 2005.b.).

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#### 4.4. How much 'bong' do you get for your Dong?

To be useful, a model must not only be effective, but also, due to inevitable budgetary constraints, it has to be *cost-effective* in terms of overall impact on health and long term sustainability. To calculate cost-effectiveness, (in the local currency, Vietnamese Dong) we divided the overall expenditure by the number of beneficiaries to get a rough estimate that we can apply to all projects: a cost per beneficiary (known as bong per dong!). Beneficiaries are calculated by number of family members per CHC members as it is assumed that all those in the household will benefit from improved hygiene of the mother of the house.

The CHC Model, as used in Africa, has demonstrated its cost-effectiveness by measuring cost per beneficiary per year. For example in Makoni District, (2000) there were 72 Community Health Clubs with a membership of 3,856, (with an average of 54 members per club) and an estimated 23,136 beneficiaries (average of 6 per family). There were 14 MoH facilitators (each with 5 clubs or more) who were paid a nominal allowance, as well as a fuel allowance. These were the only local costs for the programme. Excluding the initial training costs and the cost of equipping each facilitator with a motor bike, the running costs for the second year amounted to US\$ 24,395. The exact number of health sessions in the District was 3,731. This averages out at a cost per CHC member of US\$2.13 per year for the training; per beneficiary it is only **US\$0.35**.

In the CHC Model in the three Pilot Project districts in Vietnam there were 48 CHCs, There were 48 CHC facilitators who were paid a nominal allowance but no motorbike was provided and fuel costs were not remunerated. The budget for the local training in the District, and the total running costs for two years was US\$ 45,045, or US\$22,522 per annum. With a membership of 2,929 members and 13,268 beneficiaries (taking an average family of 4.53), this worked out at an average between the three areas at US\$ 2.60 for two years, and only **US\$1.70** for one year. Although this is higher than similar CHC projects in Zimbabwe, there are ways to make the programme more cost effective. Costs decrease as the ratio of beneficiaries to facilitator rises therefore, with 48 facilitators compared to 14 in Zimbabwe the programme is bound to cost more. In Zimbabwe more highly trained Environmental Health Technicians were the facilitators.

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Having been provided with a motor bike they were able to conduct five times as many sessions moving to five or more health clubs per week, whereas Vietnamese Village Health Workers, with no transport support, only held one session per week in their own village. Costs in the first year of a programme are usually higher as training materials need to be printed, plus in Vietnam much was spent on billboards and posters which were not strictly needed. Once facilitators in Vietnam are equipped with toolkit and transport, cost per beneficiary should decrease and number of beneficiaries per facilitator could rise if cost of transport to other villages provided, enabling VHWs to do more than one village. The amount of US\$1.70 is still cost-effective in reducing diarrhoea, and according to MoH clinical reports an estimated 267 reported cases of diarrhoea per year in the 7 communes were saved. Other methods of reducing diarrhoea often include subsidies of well over US\$100 per person for water supply and subsidized sanitation projects.

## DISCUSSION

The CHC approach holds special promise in the Vietnamese context as the socialist political system ensures a strong public sector and mass organization network at community level. Unlike many other developing countries, every village has a Village Health Worker, who has often received several months of primary health care training (sometimes they are retired doctors, doctor-assistant or nurses), and most are mobile with a motor bike. By a Government Decree they can have average financial incentive of 15 to 20 US\$) depend on location and local authority budget. Similarly, every commune has five or more commune health staff (5 to 8 by national standard), and a 'Cultural House' (Meeting Hall), equipped with a public address system that can be used for meetings and can broadcast meetings to the whole village. In addition to a proactive and well organised Ministry of Health, the National Target Program gives overall coordination in the Water Sanitation and Hygiene sector (RWSS NTP, 20011). The Pilot Project which field tested the Community Health Club Approach has shown high levels of change in knowledge and behaviour, and with very little adaptation is ready to be scaled up throughout Vietnam.

It is particularly interesting that such high rates of change have been achieved without the use of membership cards, visual aids or graduations. This may indicate that although there is value

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added by these aspects, in the context of Vietnam they are obviously not that essential in order to achieve behaviour change, although their inclusion may achieve even higher results, and attract more beneficiaries so making it more cost-effective. It appears that the key trigger in the pilot project has simply been the continual meeting and reinforcement of key messages. Despite the fact much of this has been didactic and oral, women and men have been empowered with increased knowledge none-the-less and this has resulted in significant behaviour change. With a high level of literacy in Vietnam and stricter crowd control (discipline instilled by years of communism) people are perhaps more accustomed to focus for longer periods of time as instructed, without having to be amused by participatory activities and visual aids. The Buddhist and Confucianism culture of Vietnam, which is still widespread particularly in the rural areas, emphasizes tolerance and respect and this may also account for a high level of compliance. The poetic nature and display of fine feelings, sentiment and singing enable CHCs to become a creative outlet for many, as was demonstrated by the many poems that were composed, and the spontaneous delight in singing 'karaoke', augmented by a good PA system in most villages. The positive peer pressure enhanced in CHCs is more in tune with cultural values of tolerance and respect for authority and elders than methodologies such as CLTS. National values instilled by socialism encourage group conformity and consensus, rather than individuality and self expression, and these resonate with the positive peer pressure that is at work in the CHC Model. The rigorous discipline of the masses ensures that people comply with government and strive to immediately adopt recommended practices. If leaders of the 'mass organisations' instruct their members to change, there is likely to be compliance as individualism is not an encouraged. Although integration of the Community Health Clubs into the existing village structures, has to be done sensitively to avoid confusion of roles at village level, health clubs have shown they have the potential to occupy an essential public health niche in the overall development of each village, under the wing of the well organised Women's Union, which is found throughout Vietnam. In Community Health Clubs in Vietnam there was more equity in gender, with 30-40% male members which was not always an advantage as they tended to dominate proceedings. In Africa, particularly in the rural areas, men tend to leave women to attend to issues of home hygiene, resulting in most CHCs having at least 80% women. The advantage in Vietnam is a highly

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bureaucratic government which, once it has adopted a certain methodology, is capable of scaling up rapidly through existing Ministry of Health structures. However, many of the more didactic training practices are still engrained and the rapid increase in CHCs in Vietnam will rely on a core team of effective young trainers, who can use the bottom-up participatory techniques that empower women in particular with more liberal approaches than top-down autocratic style.

The rapid decrease in a range of preventable disease may be attributed in a large part to the power of CHC's to influence behaviour, although more detailed research is needed to dissect what exactly is triggering this rapid change. As MoH budgets are limited, the CHC methodology has shown itself to be extremely cost-effective. It takes Village Health Workers a large effort to mobilise a community, and this effort should be maximised by tackling **all** preventable diseases rather than just narrow focus on one issue such as handwashing. If this is done, the VHWs time is maximised which is not only cost-effective but also in tune with the common culture. With strong evidence from a number of countries, a CHC programme with a high enough coverage of households in a catchment area; can be reasonably predicted to empty a local health clinic of all but cases of non communicable disease, thus saving government money for treatment of many common complaints. This research also shows that money is better spent supporting field workers to empower their communities with knowledge in a consistent programme, than superficial marketing strategies using costly methods such as billboards and printed pamphlets which are shown to have had little impact in reducing diarrhoea in this case. As one official from Ha Tinh remarked the CHC Model is '**low cost- high impact**'.

Although diarrhoea, dysentery, cholera and food poisoning are all diseases that are the first to be targeted in a health promotion programme associated with water and sanitation, we find that the 'added value' provided by the CHC is that other diseases respond to improved hygiene and these are also showing a pattern of reduction in clinical records.

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