

ZOD for all - Scaling up the Community Health Club Model to meet the MDGs for Sanitation in Rural and Urban areas : Case Studies from Zimbabwe and Uganda

J. Waterkeyn*, R. Matimati*, and A. Muringaniza**

* Africa AHEAD Association, 95 Dorries Drive, Simon's Town, Cape Town, 7975. South Africa

(email: juliet@afrikaahead.com)

** Zimbabwe AHEAD Organisation, 7 Maasdorp Ave, Alexander Park, Harare, Zimbabwe

(email: zimahead@iwsd.co.zw; regis@afrikaahead.com; andrew@afrikaahead.com)

ABSTRACT

Most countries in Africa will fall short of meeting the MDG targets for the provision of water and sanitation due to lack of financial and institutional capacity (WSP-Africa, 2006). Although safe sanitation has been found to be the most effective single intervention in reducing diarrhoea (Esrey, et al.1991), this does not necessarily mean building latrines, which can become a fly breeding ground if they are not sealed properly. The faecal-oral route can be broken more easily and a lot more cost-effectively through faecal burial (cat sanitation) and hand washing with soap (Curtis & Cairncross, 2003). After over a decade of pilot projects in many countries in Africa the Community Health Club (CHC) Approach has proved itself as a cost-effective model for health promotion which can reasonably predict behaviour change, creating a strong demand for sanitation and a 'Culture of Health' that insures good hygiene (Waterkeyn & Cairncross, 2005). New data from Zimbabwe shows once again high levels of community response through Community Health Clubs. In the rural areas of Chipinge District, the concept of 'ZOD' (Zero Open Defecation) has been enthusiastically endorsed by CHCs proclaiming their areas free from open defecation. In these evangelical Christian areas 'Cleanliness is next to Godliness', so ZOD is next to God. 37 Community Health Clubs with 2,388 members not only achieved ZOD, but also a 44% average improved hygiene behaviour change of 17 different proxy indicators within twelve months (Zimbabwe AHEAD, 2008). To demonstrate how the main principles of CHCs have been adapted to emergency programmes in urban areas, two other case studies are cited in this paper. In IDP Camps in Uganda (2005), over 11,000 latrines were built in eight months by Community Health Club members (Waterkeyn & Okot, 2005). In Zimbabwe, 36 CHCs brought a cholera epidemic under control in Sakubva, a high density suburb of Mutare, by a massive cleanup of solid waste and widespread adoption of hygienic behaviours. This paper demonstrates how hygiene promotion can create demand driven sanitation through Community Health Clubs, providing four different options for scaling up health promotion depending on the availability of trainers. The reduction of diarrhoea through sanitation is but one of many possible outcomes when mobilising communities through CHCs. In Rwanda, the Ministry of Health plans to scale up the approach to national level and establish CHCs within all of the 15,000 villages in the country not only to address sanitation, but to reduce infant mortality and alleviate poverty (MoH, Rwanda, 2009).

Keywords

Community Health Clubs; health promotion; hygiene behaviour change; Uganda; Zimbabwe; Rwanda

INTRODUCTION

To misquote a popular proverb: *You can take a man to a latrine but you cannot make him sit!* The Millennium Development Goals (MDGs) lofty target to halve the number of people without access to safe drinking water and adequate sanitation, cannot be achieved without the active support of the 'un-sanitised' themselves. With two out of every five people on earth still defecating in the open, what is the magic formula to get people to change their habits?

The Western mindset envisages that the obstacle to safe water and sanitation is a logistical one: that of providing hardware, finances and the 'buy-in' of lead agencies to mobilize financial resources and advocate for the need for safe sanitation as a priority (WSP-Africa, 2006). Although this correctly recognises the importance of stakeholders at managerial level, there is another obstacle to improving hygiene and sanitation: getting people to change their behaviour. The argument of this paper is that achieving the targets of the MDGs is absolutely contingent upon energising recipient communities. In the past few decades, few strategies

have successfully mobilised communities to take control of their health and change their behaviour (Fewtrell & Colford, 2004). It is unfortunate that 'Aid' is its own worst enemy as the 'culture of handouts' ensures that the process of development *disables* rather than *enables* community initiatives. The top down 'gift' of water and sanitation facilities so often provokes divisions within a community as factions compete for the limited resources. By contrast, health and hygiene promotion is a non-divisive intervention which promotes a 'common unity' (community) of understanding, because knowledge can be multiplied infinitely with little cost. Health and hygiene promotion is therefore an ideal entry point with which to mobilise a village to not only to *participate* in this challenge, but to *lead* their own process of development and contribute through self supply, particularly of safe sanitation, safe water and improved hygiene, food security as well as ultimately poverty reduction through income generating initiatives.

The need for effective and successful strategies for hygiene promotion has been emphasized repeatedly in many recent national and international forums, (Africa San Conference in Durban (2008), World Water Week in Stockholm (Falkenmark, 2008), PHASA conference in Cape Town (2008), and the WEDC Conference in Ethiopia,(2009) indicating a growing recognition of the important role health promotion plays in improving family health (Joint Agency Paper, 2008).

As a response to this call for action three main 'schools of development' have been developed in the past decade. Each model of development is in fact a theory based on different assumptions as to how people can be induced to change.

1. *Social Marketing* is inspired by the success of advertising in manipulating social change using mass media to influence choices through simple messages (Borghini et al, 2003). In Burkina Faso, for example four main messages were promoted, and after a three year media campaign changes was an average of 11% change for the four main recommended practices (WSP-EA, 2002). Based on this achievement Social Marketing has in the past few years become popular with development agencies who try to apply the lessons of commercial successes to developmental issues. Public Private Partnerships (PPP) between development agencies and commercial multinationals try to promote simple hygiene through media. The basic assumption of Social Marketing is that people are more interested in their social status rather than in improving their health, and is a reaction to the Health Belief Model (Janz & Becker, 1984) which imagined that if people understood the cause of illness they would naturally change their behaviour.

2. *Community Led Total Sanitation (CLTS)* is a radical triggering mechanism using the disgust of drinking focally contaminated water to stimulate a sense of shame in people to construct latrines (Kamal Kar, 2003). This has been highly successful in Asia where a male dominated society is able to respond to this approach and village heads enforce compliance from all households. Whilst there is almost unanimous uptake of latrines, there are no quantified measurement of other hygiene behaviour changes. However this model is now being modified to include a broader focus on general hygiene for the health reasons rather than sanitation to please the village leader. The basic assumption of CLTS is that individuals have to be publically

shamed into good behaviour for the public good, but there have been few projects using this approach in Africa.

While there is no dispute that Social Marketing and CLTS have influenced targeted populations to some extent, these methodologies tend to lead to *vertical* interventions with a view to minimise the transmission of diarrhoea. They target only a few critical aspects of public health, such as hand washing and sanitation. Both strategies attempt to change behaviour without attempting to alter the core values direct actions (Ajzen & Fishbein, 1980). Without this fundamental shift in the mindset of the person, any behaviour change will be superficial and it is unlikely the new practices will be sustained over time.

3. Community Health Club Approach

The Community Health Club Approach is a *horizontal* strategy with a more holistic concept of hygiene as an integral part of good health, and therefore seeks to address the core values that affect *all* preventable diseases, rather than just diarrhoea. This approach to development uses health promotion as an entry point into a long term process of transformation of communal norms and values, thereby creating a 'Culture of Health' that address all behavioural issues that can be controlled by both the family and community (Waterkeyn & Cairncross, 2005). Thus, in six months, members will not only improve sanitation and hand washing practices (to prevent diarrhoea) but will take measures to prevent skin and eye diseases, acute respiratory illnesses (ARIs), intestinal helminthes, malaria, bilharzia, HIV/AIDs, and malnutrition.

The basic assumption of the CHC Approach is that people do, in fact, want to understand the reasons for ill health and can change particularly if a decision is made through the group. Past development has in a typically western way, tended to appeal to each individual to change, and this may be the reason that hygiene behaviour change has been minimal. It would appear that with little margin for error and a lack of confidence in their own decisions, semi-educated individuals often feel more comfortable if the significant group decides and this enables them to change without fear of failure or jealousy. It may take longer to achieve group consensus but in the end the whole group moves up together, so eliminating the 'PhD (pull him down) Syndrome', a common attitude which undermines so many development initiatives. This theory of group behaviour change has been validated in many different contexts throughout Africa in Community Health Clubs in the past decade (Waterkeyn, 2006).

- Rural areas of Zimbabwe (Zimbabwe AHEAD/Danida/DFID, 1995-2009)
- Post war reconstruction in villages in Sierra Leone (CARE International/BLF, 2005)
- IDP camps in Uganda (HIDO/Care International/Gates, 2005)
- Rural Moslem villages in Guinea Bissau (Effective Interventions, 2006)
- Informal settlements and rural villages in South Africa (Africa AHEAD/Danida, 2008)
- Throughout Rwanda through a national programme (Min.of Health/WSP, 2009)
- Starting in Vietnam in four districts (Min. of Health/ Danida, 2009)

CHCs in Urban Areas

Whilst for many years health clubs were recognised as appropriate for rural areas with semi-literate communities, it was questionable whether they would work in towns. In the past five years the CHC Model has been effectively used in urban and peri-urban areas, including high density suburbs, informal settlements and internally displaced peoples camp (IDPs). It has been found that whether in rural or urban situations, CHC deliver the highest levels of behaviour change wherever there is a low educational level, and in the least developed areas, where high risk behaviours are common. It is less relevant in more sophisticated communities, such as areas of council houses or with city-dwellers with in-house water connection and flushing toilets. However, it is clear that many people living in towns are often new arrivals, living as they would in the country. They tend to be as unsophisticated as their rural relatives, and are often out of their depth in a new environment, so that the community cohesion to be found in a CHC can fill a void. Regular gatherings like CHCs have been found to increase in Social Capital and as a result can reduce stress related diseases such as heart disease and high blood pressure (Kawachi and Berman, 2000). They also provide social support for working mothers with young children and reduce the tendency to deviant behaviour in unsupported teenagers. If we understand health in a holistic sense then CHCs become the main reference point for dealing with living conditions and improving life skills. This applies particularly in informal settlements where the urban migration from villages to seek work is causing a massive strain on resources. This support is critical to mothers in IDP or refugee camps as it is in informal settlements.

This paper will report on health club activity in two case studies: Zimbabwe and Uganda where CHCs in urban areas have been successful.

METHODS AND MATERIALS

Method of Health Promotion

At the beginning of any CHC project, formative research is conducted within target communities to ascertain the main preventable diseases and risk practices associated with these diseases. Based on these local priorities, a 'syllabus' of up to 24 health topics is drawn up by project managers and community leaders through focus group discussions, and a tool kit of visual aids developed depicting the whole range of issues. By comparing the pictures, members can easily visualise issues, and this promotes discussion and enables consensus to develop as to what action needs to be taken. The health topics are listed on a Membership Card which is given to every member providing a sense of identity. The membership card is one of the key differences between the CHC approach and normal PHAST programmes (Sugita, 2006) which tend to be more open ended. The card also enables detailed monitoring of attendance as it is signed by the facilitator each time a member attends a session. Members and facilitators can be graded according to their average attendance levels, so providing management with comparative data to ensure all facilitator are cost-effective. Each facilitator starts between one and five clubs, depending upon the scope of the programme. The health promotion topics usually reflect the top most common diseases in the local clinic, providing they are preventable: in rural areas these tend to include diarrhoeal diseases, ARIs, skin and eye disease, intestinal helminthes, bilharzia, malaria, kwashikor, miasmas, and

HIV/AIDs. Health issues will differ in towns, and therefore the content of the training might include sessions on nutrition, drugs, alcohol and domestic violence. Whatever the topic, at the end of every health promotion session, the group pledges to make one small change in hygiene behaviour in their home. Once all topics have been covered, those members that have completed every session receive a certificate in a public Graduation Ceremony that honours those who have made the most effort. Depending on the support, dedicated members may progress to the implementation of water and sanitation infrastructure projects and other development initiatives, such as establishing nutrition gardens for food security. This design enables communities to move through four main stages in the process: health promotion, water and sanitation, income generating project and social responsibility. Only the first stage of this process is addressed in this paper.

Community Monitoring

The strength of the CHC Approach is not only its ability to *engender* hygiene behaviour change (WSP-EA, 2002) but also to *quantify* behavioural changes using community monitoring tools as an integral part of the process of change. Each CHC is charged with monitoring the hygiene behaviour changes within in its own membership (usually consisting of between 50 and 150 households). When a CHC is first formed, a Chairperson and Secretary are elected, who keep a register of each members attendance and the facilitator visits each house regularly to conduct a household inventory by observing key indicators in the living conditions. This low-cost, simple and effective method enables communities to track their own progress and to ‘own’ their own information, and consequently manage their own health without reference to the implementing agency. Any ‘problem’ households are soon spotted by the CHC committee and remedial action can be taken locally. As the household of every member of the CHC is inspected there is no need of sampling therefore the probability of error due to sampling in both case studies is negligible ($p > 0.001$).

RESULTS

Case Study 1: Rural CHCs in Chipinge, Zimbabwe

The first CHCs were started in Zimbabwe in 1995, and by 2001 there were 297 with over 13,555 members and 81,330 beneficiaries in three districts of Makoni, Gutu and Tsholotsho. This first programme was able to demonstrate high levels of behaviour change with the most outstanding area showing a 47% average for 17 indicators in Tsholotsho District (Waterkeyn and Cairncross, 2005). Since 2006, a further 115 CHCs have been started throughout Zimbabwe, with an additional membership of around 12,500 as the programme which has spread to Chipinge, Buhera and Chiredzi districts with the same popular uptake (Zimbabwe AHEAD/ Mercy Corps / Oxfam).

After the six months of health promotion in Chipinge District, there were 37 CHCs with 2,388 members (2007). A 44% average change in behaviours was achieved in one year, demonstrated by measuring 17 indicators before and after the project (See Fig.1.). All the targeted activities were practised by over 80% of the CHC households and six of them by over 90%. In terms of sanitation, 55% of households had a latrine at the end of the project and the balance were using cat sanitation (faecal burial) as evidenced by the construction of a badza stand, (a support for the hoe which is used to dig a hole instead of practicing open

defecation). This means there is in fact Zero Open Defecation in all CHC areas (ZOD was a popular terms used to define an area where all members have either a covered latrine, VIP or use cat sanitation). It should be noted that there was no subsidy for the construction of latrines, thus demonstrating the potential for Community Health Clubs to stimulate the self supply of facilities (Zimbabwe AHEAD, 2008).

Fig.1. Chipinge District, Zimbabwe, (Sept 2007) $p > 0.001$ % difference in hygiene behaviour in CHCs as shown by proxy indicators before and after 20 health promotion sessions in 8 months.

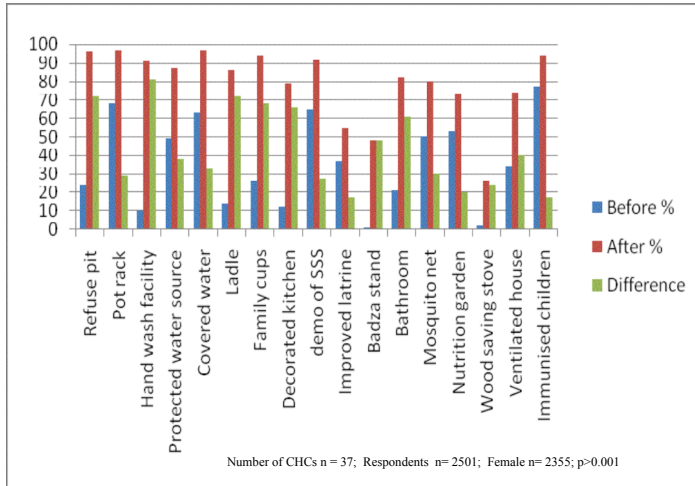
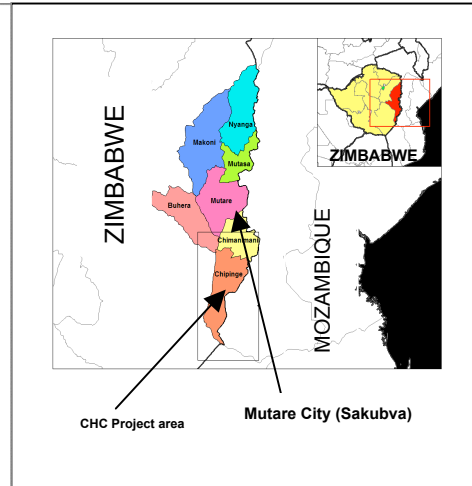


Fig. 2. Map of Zimbabwe showing Manicaland Province and Chipinge District and Mutare City (Sakubva)



Case Study No 2: Community Health Clubs in a Time of Cholera

It is estimated that in regular cholera outbreaks 0.21% of the local population will contract the disease and die: in Zimbabwe it was estimated at 4.5% when cholera peaked in February. By March 9th a total of 89,018, Zimbabweans had contracted cholera and 4,011 had died (Chambers, 2009). The principle cause of the outbreak was the collapse of the urban water supply, sanitation and garbage collection, and with the onset of the rains raw sewerage was washed into water sources, used for drinking water as municipal supplies were often cut off for days on end. There were no chemicals in the country to treat urban water supply and once the epidemic started, there was a shortage of emergency purification tablets for household water treatment. In the high density suburbs, few households could afford fuel (wood or charcoal) to boil their water. Knowledge of the cause of cholera was a further factor and as city dwellers visited their rural homes at Christmas, cholera fanned out to every one of the 57 districts in the country. With hyper inflation at 231m%, hospitals could not buy medicines, and three of the four major hospitals had shut down. On top of the cholera outbreak, the burden of disease in Zimbabwe is one of the worst in Africa, with 24.6% of active adults infected with HIV/AIDS and 300,000 children under 14 infected.

Manicaland with a population of 1.6 million recorded 12,700 cases with 420 deaths. Of this number Mutare with a population of 195,300 in 2009 recorded ‘only’ 198 reported cholera cases and 8 deaths from December to April 2009. Only 10 kms from the Mozambique border, where cholera is endemic, Sakubva (pop. 23,600) is the oldest and most dilapidated

high density suburb in this city, which hosts a sprawling open market and commuter bus stop. In March, 2009, there had been no collection of garbage for four months, and some roads were literally sealed off with metre high piles of rotting garbage. Old sewerage systems from the 1940's were unrepaired and were overflowing in the rains and mixing with broken water mains. It was expected that of all the areas in Mutare, Sakubva would be black spot for cholera. Why were there only 4 reported cholera cases and no deaths in Sakubva?

The standard emergency response by international aid agencies was to distribute NFI kits containing aquatabs and a plastic container to vulnerable households, to chlorinate drinking water. Adapting the CHC methodology to the cholera emergency, communities in Sakubva were mobilized to rapidly take control of potential health hazards providing health education to the population as fast as possible. Ten trainers were deployed within Sakubva, where they in turn trained local facilitators who rapidly formed up 36 Community Health Clubs, each with an average of 150 members. Within weeks there were around 5400 committed members, mainly women, who were attending weekly health sessions which focused on all the high risk practices responsible for the transmission of cholera and diarrhoea. With the reality of cholera, members were focused on the seriousness of the threat and responding above expectation, following all recommended hygiene practices. Hand washing with soap, clean kitchens and safe sanitation were all part of the homework.

It was unfortunate that in this emergency there was no time to do a base line survey, so as to monitor the changes. However the containment of cholera was certainly an indicator that the majority of households in Sakubva were practicing the recommended hygiene. An observable proxy indicator of the changes that had taken place in Sakubva was the disappearance of the mounds of rotting garbage. The CHC members, mainly women, divided up the settlement, with each household taking responsibility for clearing the debris and ensuring the storm drains along the road were maintained, which kept rain water flowing. Rubbish in the streets was separated, burnt and recycled and within days Sakubva was unrecognizably free from solid waste. It was estimated by the incredulous City Council that the clean up done by the CHC members would have cost US\$ 20,000 if they had used their dump trucks and six months of manpower. They are now finding ways to give contracts for solid waste disposal to the health clubs.

In June the emergency programme was completed with 2,400 people receiving certificates for full attendance of the 20 health sessions. The empowerment of women through this method is ensured, as a critical mass of people have endorsed public health standards to ensure that cholera does not re-emerge in the forthcoming rainy season, when cholera is expected to reappear in Zimbabwe.

Case Study No 3: IDP camps in Northern Uganda

From 1987 to 2007, the Acholi people in Northern Uganda suffered from one of the most violent rebel insurgency forcing 1.6 million people to leave their homes to seek protection in IDP Camps in vicinity of the main towns where they could be guarded by the army. In Gulu District, this displacement accounted for 89% of the population in 33 IDPs camps all of which had over 15,000 internal refugees. These settlements were badly congested, with scarcity of basic sanitary facilities, shortage of water, poor drainage and poor sanitation habits only 5% sanitation and contaminated boreholes, conditions in the IDP camps were

dire with high incidence of diarrhoea. In 2004, there was an outbreak of cholera in Pabbo, the largest camp, where over 68,000 people were at risk as all the boreholes were contaminated with *ecoli*. The dwellings were so closely built that when the authorities tried to build latrines to avert a public health crisis, they were told by residents that there was no space, as few families at that stage appreciated the value of safe sanitation. Around the camps the ground was so littered with faeces that it threatened security as the soldiers guarding the camp objected to sentry duty. An eight month emergency project was launched with the target of constructing 10,000 latrines within six months (HIDO/Care International/Gates Foundation). As previous projects had failed to get consumer cooperation, there was doubt that this ambitious target could be remotely achieved.

However using the CHC Methodology it would be possible but it was estimated that to achieve this number of latrines, 200 health clubs were needed and at least 20 facilitators had to be trained. Within two months training materials had been developed and NGO facilitators were trained and stationed at 15 IDP Camps, where they were scheduled to conduct 20 sessions with each health club, meeting once a week. When the project started in December 2004, there was only 5% sanitation coverage in the CHC membership. By July 2005, after only six months of the programme, the results were clearly seen, with latrines, bath shelters, tippy taps and pot racks sprouting all over the IDP camps (Waterkeyn & Okot, 2005; Mpalanyi & Mukama, 2006)

Table 1: CHC achievements in Gulu IDP Camps (2005) (HIDO Project Report)

IDP Camp Name	Size of IDP camp	Community Health Club Information			Health promotion /facilitator	Latrines constructed			Pot racks	Wash shelters	Hand wash facilities
		# CHCs	CHC members	% members : IDP h/holds		# stances (holes)	Covers on latrines	Pits ready			
May 2005	Households in Camp	# CHCs	CHC members	% members : IDP h/holds	Total health sessions in all CHCs	# stances (holes)	Covers on latrines	Pits ready			
Bobi	3460	10	786	22%	145	817	131	137	530	525	34
Palenga	2450	10	781	32%	160	790	167	198	431	428	356
Abili	1816	5	743	40%	80	203	116	47	371	124	435
Lapainat	2450	5	659	35%	80	438	108	147	580	512	184
Ongako	2166	10	1522	70%	160	1060	161	113	1003	1133	122
Lacor	1403	5	281	58%	80	265	121	23	286	126	187
Keyo	1216	5	804	66%	60	397	91		510	290	593
Pagak	2051	6	498	24%	80	390	101	78	162	328	73
Coo-pe	4089	5	980	23%	160	646	154	88	1438	218	94
Paicho	2864	10	878	30%	165	693	102	328	1402	549	14
Opit	7601	15	2280	29%	250	2723	176	463	820	1544	10
Lalogi	3743	5	871	23%	75	1054	364	168	418	415	1531
Pabbo	10,893	10	1328	12%	155	587	?	?	391	?	?
Anwer	2763	6	1090	39%	70	70	?	?	?	?	?
Teyapedola	1427	5	781	54%	75	9	?	?	?	?	?
TOTAL	50392	112	14,282	38%	1,795	10,142	1,792	1,790	8,342	6,192	3,633

Detailed monitoring by the facilitators assisted by Community Health Club members showed the following quantifiable achievements (see Table.1.) by May 2005:

- There were 14,282 members in 112 Community Health Clubs in 15 IDP Camps (28% of households) with an estimated number of 71,400 beneficiaries
- A total number of 1,795 health promotion sessions had been held by 23 facilitators in 7 months
- 11,932 latrines had been constructed (of which 1,790 were pits at time of survey)
- Of the 10,142 stances in the latrines, 1,792 had been properly covered
- 58% of CHC members (8,342) had constructed pot racks
- 43% of CHC members had built (6,192) wash shelters
- 25% had constructed hand (3,633) washing facilities
- The total budget (CARE/Bill Gates Foundation) of 2 million US\$ budgeted for the whole project included mosquito net distribution and building latrines
- Of this amount HIDO, an indigenous NGO implemented the eight months of health promotion sessions on a frugal budget of US\$54,711 at an estimated cost of 76c (US\$) per beneficiary.

DISCUSSION

These case studies in Zimbabwe and Uganda, have demonstrated the popular support that exists, not only in rural but also urban areas where women in particular have flocked to join the health clubs. Naturally, in times of emergency such as the outbreak of cholera, there is more incentive to join forces with one's neighbour if one is to survive. It is clear that CHCs are not only a popular strategy but that they do in fact produce hygiene behaviour change at levels that other health promotion strategies find hard to match. Whilst training usually takes at least 6 months in development programmes this can also be achieved in a fast track programme of half that time for emergency programmes with equal effect.

The key design factors that are the signature of the CHC approach are the same in each project, namely:

- The formation of a Community Health Club with a *dedicated membership*
- The use of the *Membership Card* to monitor attendance
- The use of *participatory activities* with visual aids in a wide range of topics
- Reward of active members in a public *Graduation Ceremony*
- The use of observable *proxy indicators* to identify behaviour change
- *Community monitoring* of hygiene behaviour changes in a Household Inventory

What does vary between the projects was the way the training is done using different cadres of facilitators to conduct the sessions. The level of support and the capacity of facilitators to do the job properly affects the cost-effectiveness of the project.

Cost-effectiveness of different CHC Models

It is important that hygiene promotion is cost-effective and that that the impact can be measured or it will simply be neglected in water and sanitation programmes. The main cost of running Community Health Clubs is providing the necessary support and mobility to the trainers. The cost per beneficiary is dependent on the number of clubs each facilitator can undertake, as the more members they have the more the cost is spread between beneficiaries. This in turn depends upon whether they are full time employees or part time semi-voluntary workers and whether they have transport to do more than one CHC in their own area. There are four main options of different types of facilitators.

Model 1: Government Environmental Health Field Staff

Some countries have environmental health field staff on the ground who can dedicate time to the programme. The most cost-effective way to provide health promotion is to use government staff who are already being paid as it merely rationalises their workload. In addition the project can be scaled-up so that each field worker is able to run 5-10 CHCs each, taking on a new batch of health clubs every six months. This means that each facilitator can train 10-20 CHCs per annum, and if every health club has around 100 members this will amount to 1000-2000 members per facilitator per annum, or (with 5 beneficiaries per member in a family) this means each facilitator can improve the lives of 5,000-10,000 people each year. It is also sustainable, as being government employees, they can continue this process long after the programme is finished, which also builds capacity within government.

For example in 2001, Zimbabwe had over 800 Environmental Health Technicians (EHTs) (with 2 year diploma in public health) stationed in clinics across the country. In Makoni District project (1999-2001) there were 15 EHTs running a total of 265 clubs, with 11,500 members and 70,000 beneficiaries in two years. Including the training, and a motor bike and training for each facilitator, the cost per facilitator using this system was been estimated at around 52c per beneficiary or US\$1000 per annum per facilitator (Waterkeyn & Cairncross, 2005).

Model 2: NGO Staff

If there are no government field workers available NGO staff will have to be hired and stationed in the field. The disadvantage of this design is that external workers will only stay for the project period which then leaves the community stranded as the NGO moves on. Therefore whilst the health targets may be achieved in the short term, this is not good practice in the long term as communities are left stranded just when according the AHEAD Model, they could take off on other initiatives.

This was demonstrated in the Ugandan Case Study where a local NGO stationed 23 facilitator in different IDP camps, with each one responsible for 5 CHCs for a period of eight months. During this period there were 116 CHCs started with 14,282 members, meeting weekly with a total of around 71,410 beneficiaries (5 per household). A total of 1,790 health sessions were done during this period at a cost of 76c per beneficiary or US\$2487 per facilitator.

Model 3: Local Facilitators

If the cost of qualified field workers is prohibitive, the third option is to hire part time local villagers who are trained to start a CHC. Unless bicycles are provided each facilitator can

only do one club in their own village, which makes this an expensive option as there are fewer beneficiaries per facilitator. However, it is perhaps the most sustainable method as the facilitator remains in the community, and may continue to work voluntarily after the project ends. The disadvantages are that with minimal education the health sessions may not be of a high calibre and will deteriorate in each generation of training so that key messages may become confused. It is also more effective when the health sessions are conducted by trained environmental personnel rather than half-educated villagers who often lack the confidence to become teachers of their peers and may not command the same respect.

Using local facilitators was recently done in South Africa (Integrated Water Resource Management Programme/Danida). As this was as pilot project, the scale was kept deliberately small with only 9 CHCs being started in Kwa Zulu Natal. Each of the 9 part-time facilitators was responsible for only one CHC in their own village, with an estimated total of 1000 members and 5000 beneficiaries, in an eight month project of weekly sessions. With little MoH support the village facilitators needed constant supervision, with a total cost of the programme amounting to US\$125,900. This averaged out at a cost per facilitator of US\$13,988 per trainer and approximately US\$25 per beneficiary. The lesson learnt here is that to be cost effective each facilitator should do more than one CHC to spread the cost of the overheads of training amongst many beneficiaries (Rosenfeld & Waterkeyn, 2009).

Model 4: Government field workers and village volunteers

The ideal scenario is to scale up CHCs by integrating this approach within the Environmental Health Department of the Ministry of Health, using Environmental Health Officers (EHOs) in conjunction with voluntary Community Health Workers (CHWs) at village level. Rwanda has recently launched their Community-Based Environmental Health Promotion Programme (CBEHPP) that is embedded within their Health Sector Strategic Plan (HSSP, 2009-12). This nation-wide programme aims to engage 45,000 CHWs from 15,000 villages across Rwanda. EHOs who are already based at Health Centres. After training they will return to their own respective wards and provide on-the-job training, mentoring and supervision to the CHWs to initiate and sustain the CHCs with a particular focus on reducing maternal and infant morbidity and mortality rates that are still alarmingly high.

CONCLUSION

There is no doubt that the CHC approach can achieve high-impact and sustainable hygiene behaviour change. It can be successfully replicated in a variety of contexts: urban and rural, informal and high density, underdeveloped and partially developed as well as within both Christian and Moslem societies. It has also been demonstrated that it is particularly cost-effective when it is scaled up and family health can be improved for as little as 33cents per beneficiary. As it is unlikely that the Water & Sanitation MDG targets will be achieved in many African countries, it is perhaps more realistic to invest in health promotion for self reliance and halve the number suffering from many preventable diseases through improving family hygiene. The CHC model can be scaled up to national level in countries like Rwanda. It should be possible to roll out health promotion through existing health extension staff and, at a minimal cost, introduce Community Health Clubs into every village in the country.

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- Email: juliet@africaahead.com
- Website: www.africaahead.org