

## **Monitoring Hygiene Behaviour Change through Community Health Clubs**

*Waterkeyn J & Rosenfeld J*

### **ABSTRACT**

*After over a decade of successful hygiene and sanitation programmes throughout Africa, the Community Health Club Approach is now recognised as a key strategy that can predictably deliver a high level of cost-effective hygiene behaviour change (Cairncross et al., 2003). New data from Zimbabwe, shows that in Chipinge District, zero open defecation (ZOD) was achieved in 37 Community Health Clubs where 2,388 members also achieved a 44% average improved hygiene behaviour change of 17 proxy indicators within twelve months. In South Africa, a recent pilot project has shown a 36% change, taking an average of 12 proxy indicators within just six months. Hand-washing practices were transformed: 82% had a hand-washing facility compared to 28% before the project started; the use of soap for hand washing rose from 39% to 93%. Measuring behavior change is critical and has been made more reliable using the new Mobile Researcher which enables community monitoring of hygiene using a cell phone. This technology is also 40% more cost-effective than traditional paper-based data collection. As the CHC Approach creates a demand for water and sanitation, it could contribute significantly to meeting the MDG targets if it could be scaled up within the next five years.*

### **INTRODUCTION**

#### **Importance of Hygiene Behaviour Change**

The lack of engagement by communities in the past and consequent lack of behaviour change in the home, has been the major constraint towards achieving potential health outcomes from water and sanitation programmes. A considerable body of literature has established the connection between improved hygiene in the home and the reduction of infectious disease (Feachem, 1984) but there have been few rigorous studies on the cost-effectiveness of hygiene and health promotion (Loevinsohn, 1990). The difficulty with improving hygiene in the domestic domain is that it also requires considerable change of habitual behaviour by the target population, who have to actively devote their own energies to the intervention if hygiene standards are to improve (Cairncross et al, 1996). A review of over 100 papers shows that whilst safe water can reduce diarrhoea by only 15%, health promotion alone can reduce diarrhoea by 35% (Esrey et al, 1991) whilst frequent hand-washing with soap is estimated to reduce diarrhoea by 47% (Curtis & Cairncross, 2003). It is for this reason that health promotion is now considered an indispensable aspect of every water and sanitation programme (Fewtrell & Colford, 2004).

Whilst some agencies depict the challenge of the Millennium Development Goals (MDGs) as the need for rapid scaling up of financial investment in water and sanitation infrastructure (WASP-Africa, 2006), this is in fact contingent on energising communities. Few strategies successfully address this fundamental gap in the process of serving the poorest of the poor. Instead the provision of water and sanitation facilities often causes further divisions within a community as factions compete for the donated resources which are usually limited due to financial constraints. By contrast health promotion is a non-divisive intervention which promotes a common unity of understanding, because knowledge can be multiplied infinitely

with little cost. Health 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 process of development and contribute through self supply wherever feasible.

The need for effective and successful strategies for health promotion has been emphasized repeatedly in many recent forums: Africa San Conference in Durban (2008), World Water Week in Stockholm (Falkenmark, 2008) and PHASA conference in Cape Town (2008).

In the past decade three main ‘schools of development’ have developed in relation to the promotion of hygiene behaviour change through health promotion, each based on different assumptions as to how people can be manipulated into changing their habits:

- **Social Marketing** has become a popular form of health promotion based on the success of advertising in manipulating social change through subliminal messaging in the media (Borghi et al, 2003);
- **Community Led Total Sanitation** uses disgust to shame people within villages to construct latrines for the sake of social status (Kamal Kar, 2003);
- **Community Health Club Approach** appeals to an innate need for health knowledge, which is then reinforced by peer pressure to conform to communally accepted standards of hygiene (Waterkeyn, 2006).

While there is no dispute that Social Marketing and Community Led Total Sanitation have influenced the target population, these methodologies tend to lead to *vertical* interventions to minimise diarrhoea, targeting only a few critical aspects of public health, such as hand washing and sanitation with a view to prevention of diarrhoeal diseases. They tend to focus changing behaviour without changing the core values that direct actions and therefore the new practices are not likely to be sustained.

### **The 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 framework of development, uses health promotion as an entry point into a long term process of transformation of norms and values which creates a ‘Culture of Health’ that address all behavioural issues that can be controlled by the family and community (Waterkeyn & Cairncross, 2005). Thus in six months members will understand and take measures to prevent not only diarrhoea, but also skin and eye diseases, ARIs, intestinal worms, malaria, bilharzia, HIV/AIDs and malnutrition (Waterkeyn & Cairncross, 2005).

Community Health Clubs have been started by a number of agencies in the past decade: in Zimbabwe (Zimbabwe AHEAD), Sierra Leone (CARE International), Guinea Bissau (Effective Interventions), Uganda (Care International) and South Africa (Africa AHEAD).

The first CHCs were started in Zimbabwe in 1995 where some of the 265 original health clubs are still operational a decade later. The first Community Health Club programme was started through the Ministry of Health in Tsholotsho and Gutu Districts by Zimbabwe AHEAD (funded by DFID), and in Makoni District (funded by Danida). A survey of 1,250

households in three different districts showed highly significant levels of difference between the two health club members and a control group of non health club members. Tsholotsho, with 32 health clubs and 2,105 members showed a mean difference between the two groups of 43% (70% : 27%) (Waterkeyn & Cairncross, 2005). The more developed district of Gutu where there were 85 health clubs with 4,489 members, showed an average difference of 28%, whilst Makoni with the most development in water and sanitation, where there were 265 clubs with 11,450 members, still managed a 13% mean difference (Waterkeyn, 2003).

In Zimbabwe, despite the economic collapse of the country in 2001, over 5,000 nutrition gardens have been started through the CHCs which helped cushion the effects of food shortages despite the country's economic collapse. Even during hyper inflation it was found that some members were able to build onto their homes from sale of vegetables (Waterkeyn, 2006). Since 2006, a further 115 CHCs have been started with a membership of around 12,500 as the programme has spread to Chipinge (56 CHCs), Buhera (35 CHCs) and Chiredzi districts (19 CHCs) with the same popular uptake. In the worst cholera outbreak seen in Africa for many years there were 198 cases and 8 deaths in Mutare. Sakubva, one of the high risk high density suburbs in this city was an expected black spot. 37 CHCs were started with around 5,000 members who were directly responsible for a massive communal clean up and as a result of the Community Health Clubs preventing the transmission through good hygiene there were only 4 cases and no deaths (Unicef, 2008).

The initial CHC training in Sierra Leone was in Bo and Moyamba Districts where 52 CHCs were started with an average of 100 members per club (Waterkeyn, 2002) but no post intervention was made to enable hygiene changes to be captured. However the CHC approach was replicated in Koinadugu, and a recent evaluation speaks highly of significant success of the Health clubs having helped to increase social capital and reconstruct communities after the civil war (Azurduy et al., 2007).

In Uganda, CHCs have significantly improved hygiene and sanitation in overcrowded IDP camps (Waterkeyn et al., 2005). The approach was introduced in Gulu (Waterkeyn et al., 2005) with 116 CHCs with 8,884 members. Again the methodology has spread to Pader District and reports reflect that the CHCs produced behaviour change and was again evaluated positively (Mpalanyi J & Mukama, D. 2006). In 2008 a number of indigenous NGOs were trained in the approach and it appears health clubs are now common in Uganda.

In Guinea Bissau, CHCs have been used in a programme to reduce infant mortality (King & dos Santos, 2007) in some of the poorest communities in Africa, and results are still being processed. The MoH in Vietnam is gearing up to pilot this approach for the first time in Asia.

Rwanda will be the first country to launch a national CHC programme in October 2009, enabling this methodology to be fully integrated into the Ministry of Health, starting Community Hygiene Clubs in the 14,000 villages throughout Rwanda facilitated by Community Health Workers.

This paper presents some of the latest results of hygiene behaviour change in CHC projects in South Africa and Zimbabwe.

## Measuring Hygiene Behaviour Change

With Sub Saharan Africa substantially behind the rest of the world in reaching the MDGs in five years time (WSP-Africa, 2006), meeting implementation targets tends to consume all our energies so that few projects can devote time or resources to effective monitoring and evaluation. This integral component of any successful intervention is often overlooked in the hurry to get on with the job of providing water and sanitation services. If the objective of providing water and sanitation is ultimately to reduce preventable diseases then it is logical to monitor not only infrastructure, but also changes in hygiene behaviour that result in reduction of transmission of diarrhoea. Therefore alongside the counting of rehabilitated boreholes or latrines, for example, individual and community behaviour changes should be tracked and changes measured quantitatively.

As a secondary theme, this paper demonstrates how communities can monitor their own behaviour changes using a ‘Household Inventory’, which is further facilitated by collection of collecting the data on a cell phone. This innovation may provide an opportunity for improved monitoring of behaviour change enabling the sector as a whole to have a better understanding of which strategies in development can produce the most cost-effective positive hygiene behaviour changes.

## METHODS AND MATERIALS

### Hygiene Behaviour Change in Community Health Clubs

The strength of the CHC approach is not only its ability to *engender* hygiene behaviour change (WSP-EA, 2002) but it is also able to *quantify* behaviour change using community monitoring tools as an integral part of the process of change. At the beginning of any CHC project, formative research is conducted within target communities to ascertain the main preventable diseases and the main risk practices associated with these diseases. The health promotion training focus on the top most common diseases in the local clinic providing they are preventable: these tend to include diarrhoeal diseases, acute respiratory infections, skin and eye disease, intestinal worms, bilharzia, malaria, kwashikor, miasmas, and HIV/AIDs.

Based on local priorities, a ‘syllabus’ of between 20 and 24 health topics is drawn up by project managers and community leaders through focus group discussions. A culture-specific ‘Tool Kit’ of over 100 picture-cards is developed prior to training for each topic, depicting local issues. Facilitators are selected from the community and trained in PHAST activities using the ‘Toolkit’ of illustrated cards which depict local risk practices. By comparing the pictures, members can more easily visualise issues and this promotes interest, discussion, debate and consensus as to what action needs to be taken.

The various health topics are listed on a Membership Card which provides the structure to the training. This is the difference between the CHC approach and normal PHAST programmes (Waterkeyn, 2006) which tend to be more open ended. Every member has a Membership Card, providing a sense of identity and commitment and loyalty to a dedicated group. The card is signed upon attendance, which enables monitoring of information dissemination for both the community and project managers.

Each facilitator starts up between one and five clubs, depending upon the scope of the programme. Every week a new topic is discussed, using visual aids and participatory PHAST activities to problem-solve (Sugita, 2006). At the end of every health promotion session, the group pledges to make one small change in hygiene behaviour in their home. For example, if the discussion has focused on how to protect drinking water from contamination, members pledge *'By next week, everyone must have found a way to safely cover all drinking water containers'*. Safe water storage then becomes one of the proxy indicators that are measured. Within six to eight months all topics will be covered and those that have completed all sessions receive a certificate in a public Graduation Ceremony that honours those who have made the most effort. These dedicated members then progress to the implementation of watsan projects and other development initiatives such as establishing nutrition gardens for food security.

### **Community Monitoring**

Each CHC is charged with monitoring the hygiene 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 attendance of the members. They are responsible for ensuring that levels of hygiene are monitored by the club facilitator. Using a simple exercise book, with columns for each indicator, the facilitator visits each house and observes the living conditions. These observations, known as a 'household inventory' are conducted on a regular basis enabling each CHC to identify exactly when the agreed behaviour and lifestyle changes have been made. 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. Each CHC encourages all members to improve their hygiene through group consensus and peer pressure. House to house visits by CHC members reinforce the selected target practices, and in a sense use the 'Hawthorne Effect' as people tend to change if they know they are being noticed. In addition, some programmes add impetus by providing rewards for the best health club and model homestead.

### **Proxy Indicators for Hygiene Behaviour Change**

Although it would be ideal to measure the result of health promotion by reduction in disease, it is difficult to obtain convincing results tracking, for example, the number diarrhoea episodes in rural communities. It is more feasible to observe changes in 'proxy indicators' which are known to reduce diarrheal diseases (Feachem, 1984), for example a hand-washing facility with soap and water, indicates the practice of safe hand-washing. As diarrhoea can be caused not only by unsafe water, but also unsafe food, and can be transmitted by the famous 6 'F's (Faeces to Fingers, Flies, Food, Fluids, and Fruit), the reduction of diarrhoea depends on multiple improvements in home hygiene. Therefore all practices that break the faecal-oral route can be identified and these all need to be targeted by health promotion activities that seek to reduce diarrhoea. These indicators concentrate on safe drinking water (source, storage and consumption) and safe food (preparation, storage and consumption), which

involves the protection of food and water from contamination by faeces, through safe sanitation.

### **Data Collection Tools: The Mobile Research Platform**

Of course, the data collected by the community has to be collated and computerised which usually represents a challenge. With the well known constraints of paper based data collection, many project managers would be forgiven for neglecting this aspect of the programme. However the process has now been made immeasurably more efficient by the use of a new technology that caters to all levels of technical expertise and education: the common mobile phone, which has been adapted to store and conduct digital surveys.

There is no difficulty in convincing facilitators to use cell phones for data collection even if they have only basic education. In recent years there has been a phenomenal uptake in the use of cell phones, with more than 2.4 billion users worldwide in 2006, of which 41% live in developing countries. Despite dire poverty, cell phone companies have had an instant success in Africa, where their use is growing twice as fast as any other region, increasing from 63 million users in 2004 to 152 million in 2006 (ITU World Telecommunications, 2008).

Fieldworkers only have to open the Mobile Researcher application on their cell phone to access their assigned surveys, which stores completed surveys before they are submitted to the Research Console. Since all completed surveys are automatically uploaded onto the Research Console, the need for lengthy and error-prone data entry is removed, improving overall data integrity and dramatically saving valuable time and resources. If there is no network coverage in the project area, a hundred surveys can be stored on the phone at a time and then sent once the fieldworker is where there is coverage. In this way, behavioural changes at the individual, club and community level can be tracked on a monthly basis. The Mobile Researcher has been used in South Africa where facilitators have conducted spot observations of the physical facilities in each household using the 24 indicators itemized in the Household Inventory and Membership Cards.

## **RESULTS**

The results in hygiene behaviour change in Community health clubs have been drawn from two newcase studies:

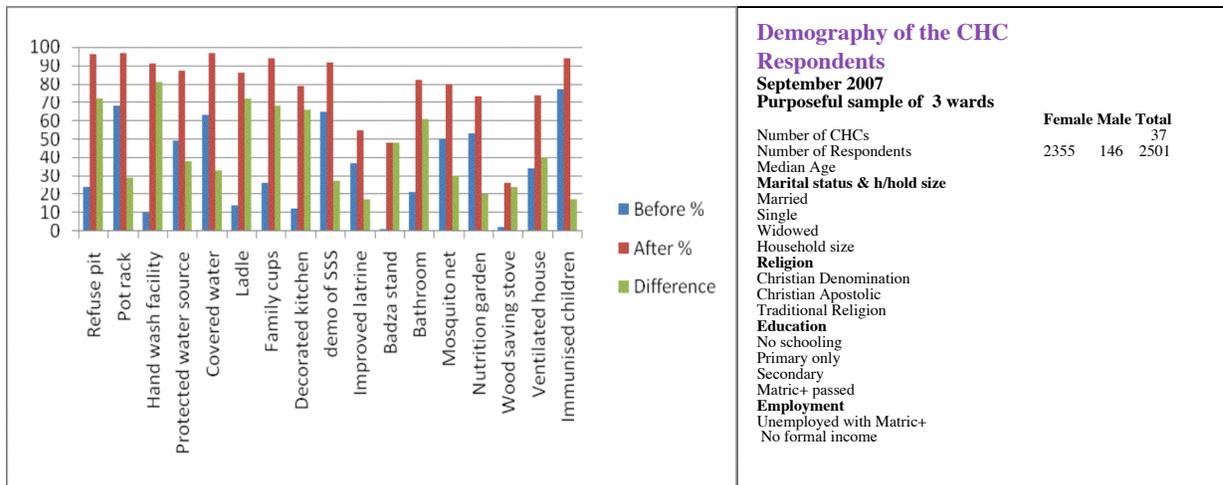
- Zimbabwe: Mercy Corps has supported Zimbabwe AHEAD, funded by British Lottery Fund (2006-2007) and EC Funding (2007-2010)
- South Africa: Africa AHEAD is the service provider for Department of Water Affairs, funded through Integrated Water Resources Programme, supported by Danida.

The behaviour changes that are measured in the following case studies provide an average of between 17 and 21 different practices. Taking the average percentage of change in hygiene behaviour as observed through standard indicators, we can compare the different CHC projects.

## Zimbabwe

In Chipinge District after the six months of health promotion there were 37 CHCs with 2,388 members (2007), with a 44% average change achieved in one year, demonstrated by measuring 17 indicators before and (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, we see that 55% of households have a latrine at the end of the project and the balance are 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 (ZOD) (defined to include not only no open defecation around the house but also clean covered latrines with no faeces) in all CHC areas. It should be noted that there was no subsidy for the construction of shallow wells and latrines by Zimbabwe AHEAD, thus demonstrating the potential for Community Health Clubs to stimulate the self supply of facilities. (Zimbabwe AHEAD, 2008)

*Fig.1. Chipinge District, Zimbabwe, 2007. % difference in hygiene behaviour in CHCs as shown by proxy indicators before and after 20 health promotion sessions in 8 months.*

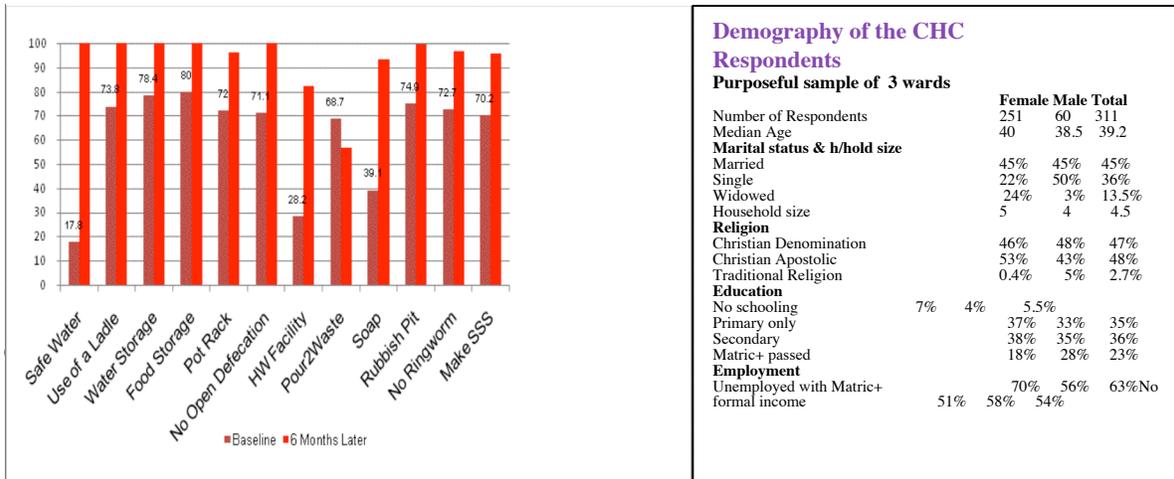


## South Africa

The CHC Methodology has just been piloted in South Africa (2009), where nine health clubs have been meticulously monitored to establish whether this methodology will be effective in the South African context. The levels of behaviour change as a result of six months of training show an overall average of 36%, taking 12 main indicators. In the post intervention survey (August 2009), it was found that 76% of all registered members are now following the recommended practices promoted during the weekly health promotion sessions. As is shown (Fig.2) below, whereas before the project only 17.8% had safe water, there is an 82% change with all CHC members (100%) now consuming safe water. Although the water source has not been rehabilitated and therefore it is still not safe, members now treat their water, store it safely and take it using a ladle, so minimizing ecoli contamination.

Safe Sanitation has increased from 71% to 100% with households with no visible open defecation around the house. In addition, whereas only 28% of member households had a dedicated hand washing facility near their latrine at the beginning of the project, 82% have now constructed a simple facility that allows them to wash their hands immediately upon exiting their latrine. Even more impressive is the use of soap for hand washing that has risen from 39% in February to 93% six months later. Ringworm is a good indicator of hygiene as it can be easily seen without medical assistance. Facilitators monitoring ringworm in CHC households reported a 25% drop in six months. In addition almost all mothers can now prepare SSS correctly, so saving lives of babies that might have died from dehydration.

*Fig.2. Kwa Zulu Natal, South Africa, (2009) 26% difference in hygiene behaviour in CHCs as shown by proxy indicators before and after 24 health promotion sessions in 8 months*



**Cost-effective Hygiene Behaviour Change**

Upgrading the quality of life and family health through Community Health Clubs can be very cost-effective but this will depend on the scale of the programme i.e. the number of health clubs per facilitator and number of facilitators. If every facilitator is runs five health clubs, each with between 50 to 150 members it can be very cost-effective. Indeed, in Makoni District of Zimbabwe, 2002, where there were 265 health clubs in operation with 14 facilitators health promotion sessions cost as little as 36 US cents per beneficiary. The costs obviously rise if there are fewer clubs as the overheads remain the same. For example, in Tsholotsho, Zimbabwe, cost per beneficiary amounted to US\$3.30 for 11,577 beneficiaries, (2,105 households) (Waterkeyn & Cairncross, 2005). The recent programme in Umzimkhulu in South Africa with only 9 facilitators each running only one CHC also cost in the region of US\$28.00 per beneficiary (a total of 5,000 beneficiaries), which included all core costs of starting up, developing training materials and administering this pilot project.

Although there has been no clinical statistical data to support these claims, given the proven association of hygiene to the prevention of diarrhea (Feachem, 1984), there can be little

doubt that family health has been improved where health clubs have been established in Umzimkhulu, and there is a high demand to scale up this programme to all other wards in the Municipality. There is also anecdotal evidence of the self-motivated improvements that some health clubs have already made as contingency measures to protect their water sources without any external financial or technical assistance. Each CHC also has a trained building group, able to construct and upgrade traditional pit latrines on demand from members, with no external financing. This display of self reliance validates the CHC Approach, which aims to empower communities so that they manage their own health and utilize existing resources more effectively, at least until government can provide the required services.

### **Cost-effective Monitoring and Evaluation**

If research becomes too expensive or logistically difficult, it can skew the budget and detract from the main objective of any health and development project, which is to improve family health in impoverished communities. Having been responsible for both research programmes in Zimbabwe in 2001 (Waterkeyn, 2006) and in South Africa in 2008, we can confidently compare the costs of two programmes where similar ‘Household Inventory’ surveys have been done.

The first CHC programme ever implemented was in Zimbabwe (1997-1999) and was evaluated in 2001. This research (Waterkeyn, 2006) consisted of 1,125 surveys in three districts in Zimbabwe. After three months of data collection and a further five months of manual data entry and analysing the data, the process had taken a total of ten months. The total cost of the survey (2002) in terms of field expenses was US\$40,300 with a cost per survey for data collection and computerisation of US\$35.75.

In stark contrast, by using a mobile researcher, Africa AHEAD (2009) produced a detailed research report of a survey of 350 households, conducted and analysed within just one month. Five fieldworkers were selected from the three provinces and after a few hours of training and a trial run, the fieldworkers dispersed to their areas. The total cost of the base line survey was US\$ 5,050, of which only 36% was the cost of the technology, the balance being the cost of the fieldworkers. The surveys therefore cost US\$ 14.42 each, which was just 40% the cost of the survey done in Zimbabwe. Paper-based surveys not only make conducting comprehensive monitoring and evaluation logistically challenging, but surprisingly, they are also more costly than using the Mobile Researcher platform let alone the considerable savings in amount of time required for the survey and the far greater accuracy and opportunities provided for real-time use of the data

### **CONCLUSIONS**

The global community has been challenged by the Millennium Development Goals (MDGs) to halve the number of people without access to safe drinking water and adequate sanitation, which now amounts to two out of every five people on earth. But how in fact, is this lofty ideal to be achieved by the well meaning development community without the active support of the ‘un-sanitised’ themselves? To misquote a popular proverb: You can take a man to a

latrine but you cannot make him sit! The challenge of the MDGs is less a technical challenge, but rather a sociological challenge: how to make people change behaviour.

The Community Health Club Approach has repeatedly provided quantifiable evidence that people have changed their hygiene behaviour to a highly significant degree, wherever they have had the opportunity to learn in groups. There is no doubt that the CHC methodology not only works, but that it can be replicated in a variety of contexts, peri-urban and rural, Christian and Moslem, underdeveloped and partially developed. It has also demonstrated that it is cost-effective particularly when it is scaled up providing donors with an opportunity to improve family health at as little as 33 US cents per beneficiary. Using the CHC methodology there has been virtually no resistance to change from the community and clubs regularly attract up to a hundred members per session

As it is unlikely that the infrastructure will be supplied on target, it is more cost-effective to invest in health promotion for self reliance. The response to joining CHCs leaves no doubt that women in particular value knowledge and can organise themselves once they know what they need to do to prevent disease. African countries could roll out health promotion through existing voluntary health workers and, at a minimal cost, start Community Health Clubs in every village as Rwanda is planning to do. The time for pilot studies has passed and the CHC model has shown it can be replicated and scaled up to national level. If Africa does not succeed in halving of the number without water and sanitation facilities by 2015, the continent could at least halve the number suffering preventable diseases, which is in fact the main objective of providing water and sanitation.

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### Contact details

Jason Rosenfeld, MPH  
136 Main Road  
Kalk Bay, Cape Town  
South Africa 7975  
Tel: +27762732163

Juliet Waterkeyn, PhD  
95 Dorries Drive  
Simon's Town, Cape Town  
South Africa 7975  
Tel: +27217862664

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Fax: +27217888855  
Email: [jason@africaahead.com](mailto:jason@africaahead.com)  
[www.africaahead.org](http://www.africaahead.org)

Fax: +27217888855  
Email: [juliet@africaahead.com](mailto:juliet@africaahead.com)  
[www.africaahead.org](http://www.africaahead.org)

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