

## **Community Led Total Sanitation could pave the way for wide spread adoption of dry toilet in environmentally challenged / water scarce areas globally**

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### **Background**

Nearly 2.6 billion people of the world do not have access to basic sanitation. More than 2 billion defecates in the open with a consequent loss of health including child mortality, women abuse, loss of labour and other economic losses contributing to trillions of dollars. In every 15 second one kid mostly under 5 are dying globally due to diarrhoea, cholera and other enteric diseases caused by poor sanitation mainly Open Defecation which is preventable.

Over many decades the solution to tackle the mammoth problem was to provide free/ subsidised toilet to rural/urban people. Largely this approach did not work and the infrastructures were used for purposes other than toilet. Community-led Total Sanitation (CLTS) is an innovative approach for empowering communities to completely eliminate open defecation (OD) as a starting point. It focuses on igniting a change in collective hygiene behaviour, which is achieved through a process of collective local action stimulated by facilitators from within or outside the community called 'Triggering'. The process involves the whole community and emphasises the collective benefit (public good) from stopping OD, rather than focusing on individual behaviour or on acquisition or construction of household latrines (individual good).

### **Dry Toilet and environmentally challenged water scarce areas.**

As the title of this paper suggests that CLTS could pave the way for widespread adoption of dry toilet in environmentally challenged /water scarce areas of the world, let us look at the huge population who lives in such areas. The number of people practising open defecation or lacking access to basic sanitation in the whole of Sub Saharan Africa is more than 450 million and that of India it exceeds 630 million. While world's 40% of total area is considered to be dry land, the extent of dry lands in various regions ranges from 20-90%. Dry lands are inhabited by more than 2000 million people, nearly 40 percent of world's population. *White and Nackoney (2003)*. In Africa the total dry land area is 12,933000 sq.km or 43% of the whole continent. In Asia this total is 39%. These include arid, semi-arid and dry sub-humid areas. *UNSO/UNDP (1997) and IIASA/FAO, (2003)*. The population living in the dry land are Dry land populations are frequently the most poorest in the world, many subsisting on less than US\$ 1 per day. *White et al. (2002)*. Regionally Asia has the largest percentage of population living in dry lands: more than 1400 million people or 42 per cent of the region's population. Africa has nearly the same percentage of people living in dry lands (41%) although the total number is much smaller at 270 million. South America has 30 percent of its population in dry lands, about 87 million people. Rural people living in dry lands can be grouped into nomadic, semi-nomadic, trans and sedentary small holder agricultural population. *Ffolliott et al. (2002)*. Majority of this human population of the dry lands live in increasing insecurity due to land degradation and desertification. The sustainable management of dry lands is essential to achieving food security and conservation of bio mass and bio diversity of global significance. *UNEP (2000)*.



**Figure 1. The fate of toilets constructed by outside agencies - Port Loko district Sierra Leone. Whose design?**

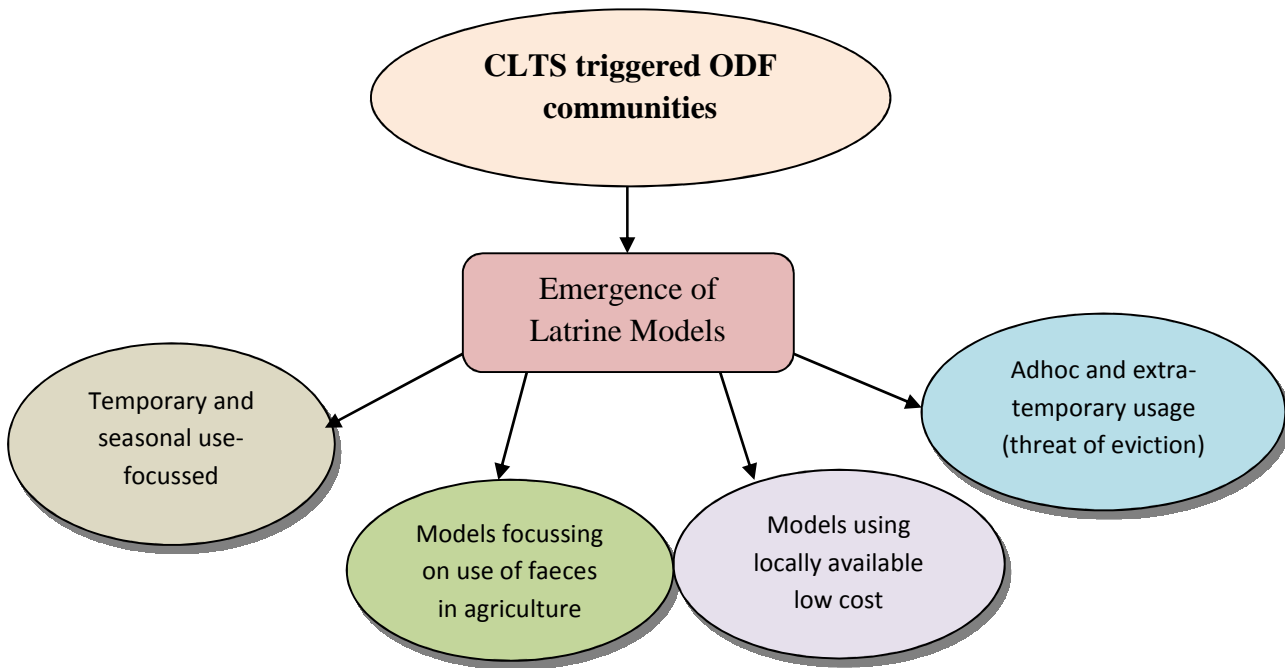


**Figure 2. Fate of sanplat -Ibb province, Yemen. Whose idea?**

### Why CLTS could pave the way for wide spread adoption of Dry Toilets?

- CLTS triggers spontaneous and instant thinking process in the minds of local communities to eliminate all contacts from human faeces right at the moment when they realize that they were ingesting each other's shit. The initial thought process of achieving this generally starts with the thought of a simple pit latrine. Any further idea of improving the pit latrine is a sequential process which depends on many factors. The instant reaction is to bury and cover the shit right now and this must not be allowed to lay exposed on the ground. Hence, the immediate thought is construction of a dry pit latrine.
- Most other sanitation approaches suggests and/or prescribe improved technologies with a special focus on technology such as VIP latrines, Eco-San (Urine Diversion), Pour Flush latrines, pit latrines with RCC slab etc.
- Not necessarily these are always dry toilets. Generally they are expensive, dependent on external technologies, access to market and on external input for repair and maintenance.
- Starting from a simple pit latrine the ODF community gradually move up along the sanitation ladder and improve their latrines which depend on many factors. In addition to the factors mentioned above the following are also very important:
  - Cultural practices and social norms
  - Availability of low cost local materials
  - Mobility of the people (Nomadic, semi-nomadic and population living in riverine delta regions affected by severe erosion of embankment and other climatic/environmental factors)
  - Ownership/Access to land, Makeshift/Temporary settlement etc
  - Urban or Rural Settlement

Therefore outsider's prescription of technology-based single sanitation solution/s may not work everywhere simply because it may not fit in well with the social, economic and cultural norms of the people living in highly diverse environment all over the world. On the other hand CLTS does not prescribe any particular technology but triggers the human instinct to initiate collective local action to stop open defecation at their earliest and move on from there.



**Focus-oriented variations of toilet models built by communities**

Within fairly short time after triggering, ODF villages emerge where collective hygiene behaviour of the local community change. From this point onwards the community starts moving along the sanitation ladder and invest in improving their toilets. At this stage a basket of choice of technologies is a more appropriate intervention rather than prescribing a particular technology promoted by any particular institution/organization.



**Figure 3. Community members of Preah Vihear Province of Cambodia charged up to make their community ODF immediately after triggering.**



**Figure 4. A man digging toilet pit immediately after CLTS triggering in a village of Cambodia.**

In this paper I would like to recommend strongly that a blanket suggestion of any technology does not necessarily fit in a wide variation of socio- economic, socio- cultural, geo-political and conflict-ridden agro-climatic and geo-physical/environmental conditions. While in all traditional approaches to sanitation generally the prime focus is on technological and infrastructural aspects of interventions, the social economic and political aspects of the new interventions are generally overlooked. In a striking contrast to traditional approaches to sanitation, CLTS do not prescribe any solution be it technical or

social but encourages the community to adopt anything that suit them best. Moreover, while the traditional approach finds the solutions to sanitation problems in toilet construction at household level, in CLTS it is the collective behaviour change that counts most. Possessing a latrine is not so important so far the individual doesn't defecate in the open or allowed to do so by the community. One can always use his or her friends/relatives/neighbours or community latrine. The entire triggering is based on human elements of *disgust, shame, self respect* and *fear* which are over arching to any human being living in any parts of the world. Another variation depends on urban/rural settlement. In most urban settlements the population density is very high and disposal of excreta is largely dependent on the sewerage system built by the state. Whereas in rural and peri-urban areas households think of constructing their own pit latrines either in their homestead land or in common public land.



**Figure 5. Toilet models developed by the ODF community in Kalimantan, Indonesia to tackle the problem of high water table and seasonal water logging. Notice how Rain-water harvesting jar is used as an underground septic tank.**



**Figure 6. Local innovation of short term of retractable models of plastic tank (used medicine containers in Madagascar)**

Now let us look at the wild fire of CLTS that has been spreading across Asia and Africa. With the innovation and introduction of the approach in early 2000 in some countries in Asia and then in 2006 in Africa revolutionized the whole sanitation scenario particularly in the rural areas of the two continents. Interestingly the approach spread much faster in relatively dry and low rainfall areas as compared to the areas where water is available in abundance. CLTS has spread in more than 30 countries in the continent of Africa of which 28 falls in the countries falling under the dry areas.



**Figure 7. Buckets are used to collect excreta from all members of families which are applied to vegetable fields at periodical intervals- Xanxi province China.**



**Figure 8. Rows of open toilets attached to each house hold mark the villages in Pucheng province**

A close look at the type of toilet built spontaneously by people living in these areas is all dry pit latrines. It is important to mention here that the outcome of CLTS triggering is reflected in the spontaneous reaction of the community those who are triggered. In most cases the spontaneous reaction and the thought process of the community is to build dry pit latrine to stop faecal-oral contamination. All the other thought process of pour flush latrine etc comes later as a way of moving up along the sanitation ladder. The logic behind this thinking process is obviously based on the scarcity of water in the dry environment.

There is a huge variation in the style, concept and design of toilets constructed by the people both traditionally and as a result of CLTS triggering no matter whether these areas fall under dry lands or areas which receive abundant precipitation.



**Figure 9. A mother's face radically changed to show disgust and unhappiness when she learned about open defecation in her own community.**

Dr Kamal Kar pioneered CLTS in Bangladesh in 1999- 2000 and actively spread it in countries of Asia, Africa and Latin America which is now adopted/ rolled out in more than 50 countries with at least 30 countries in Africa alone.

Thousands of villages have been declared ODF by the local communities themselves with their own initiative, and at least 15 governments of African nations and two in Asia have adopted CLTS as the main approach in their national sanitation policies. CLTS is being rolled out in many countries as *the approach* for enhancing the area coverage and influencing millions of people to change their hygiene behaviour to benefit from improved health sustainably.

The global experience of CLTS from the countries across the world suggests that as a result of CLTS triggering the very first response of the triggered community in most cases spontaneously start in digging a pit latrine as an immediate action to stop the faecal-oral contamination, which originates from the practices of OD. This human instinct of urgently stopping ingestion of each other's shit is a very powerful trigger whereby the community no longer wants to see human excreta in their own environment.

However the move along the sanitation ladder varies from region to region depending on various factors such as:

- Durability of pit latrine constructed immediately after triggering
- Local ecological and climatic conditions (high rainfall, drought prone, loose/stony soil, water table etc)
- Convenience and cultural practices (using human excreta for agricultural purposes).
- Cost-effectiveness of the technological options available for improvement of pit latrines
- Access and affordability to local market.
- Dependence on external input, technical support of masons.
- Ease of handling and reuse.



**Figure 10. Villages in Altiplano, Bolivia.**

**Figure 11. The following pictures of toilet constructed by the communities in different parts of the world in highly diverse environment signify community’s preference to different kinds of toilets.**



**Figure 12. Dry pit latrine with retractable wooden lid cover constructed within a few days of triggering in villages in Zuunkharaa Sum in Mongolia.**

**What motivates and prevents**

Adoption of any kind of toilet is closely related to hygiene behaviour change rather than acquisition of a physical toilet – be it dry toilet or pour flush. Traditionally toilets were given to people as a readymade option in many forms. In all those attempts the technology and structural details of the toilet were considered more important than ensuring clean and safe environment, free from faecal-oral contamination directly impacting on human health as an ultimate outcome. In ECOSAN the focus was on enhancing agricultural production and livelihood through the recycling of human waste. But in most of those, the basic element of human behaviour change was either largely missing or introduced in a top-down teaching mode. In other words the focus of the traditional approach to sanitation was more on “*things*” rather than “*people*”. Mostly the technologies failed due to the failure in changing the hygiene behaviour of the users (people) for whom these were created.

In the past the main drivers of change have been health, sanitation, disease etc. whereas the issues like shame, disgust and self-respect remained largely untapped. In other words the motivating factors or the trigger behind the usage did not really work the way it was expected. However when CLTS is implemented without subsidy or any top-down prescription of technology with a focus on the hygiene behaviour change things moved radically.

### **Appropriate entry point of dry toilet**

Today communities in hundreds of thousands of villages across Asia, Africa and Latin America stopped Open Defecation as a result of triggering CLTS. The concept of Dry Toilet is spontaneously reflected by rural communities as soon as Community Led Total Sanitation (CLTS) is triggered. This has been our observation from triggering of CLTS in most countries across the globe wherever OD is rampant. In most of these countries the CLTS triggered communities immediately think of the dry pit latrine using ash and local materials for construction as the first and easiest option. This could be an entry point for introduction of dry toilet in many of the countries where access to market and availability of water is quite difficult. Millions of people in the entire Sub-Saharan Africa and Asia live in the rural areas with difficult access to markets. More than 80% of the 2.6 billion having no-access to basic sanitation earn less than a couple of dollars a day, hence may not afford to have an expensive toilet solution. Furthermore a large majority of the same of that category are also landless, marginal farmers or share croppers. Although culture and taboos of handling human excreta is a limiting factor in some countries, the value and richness of human excreta in enhancing agricultural production is largely understood by these populations.

During CLTS triggering when the rural communities confront the reality that they have been eating *“each other’s shit”* through their own analysis, the immediate reaction in general is to dig a pit and confine shit safely preventing it from spreading everywhere. Through this first step of a pit latrine great community innovations of moving along the sanitation ladder has taken place globally. A close look at the evolution of community innovation is clearly reflected in a bipolar pattern of growth which is heavily influenced by environment and agro-ecology of the area. In large parts of dry and draught prone areas, rural communities moved along a path of building dry pit latrines and improving them gradually which requires very little or no water. Whereas in places with high rainfall and availability of water people prefer to move along the line of water closet, pour flush and other such toilets mostly starting from a pit latrine.

**Figure 13. Dry pit toilets constructed using locally available low cost materials within days of triggering CLTS in Menabey region, Madagascar.**



**Figure 14. (Centre) Cemented lid cover of dry pit latrine, Madagascar.**



In the first category of dry areas use of ash, **urbaloo**, closing filled-up pits for ensuring continuous supply of manure and other technologies like heavily slanting plastic toilet pans emerged. All these pave the way and provide great potential for introduction of dry toilets. There is a great possibility of combining Eco- San with CLTS in such dry agro-climatic areas. This is even better if the use of human excreta in agriculture is also acceptable socially by the community. While CLTS could trigger the demand, dry toilets could offer the solution appropriate for the area. Now the question is “*who*” decides the technology and “*how*” it is decided? The concept here is to begin with “*technology assessment followed by technology refinement*” rather than “*technology prescription or transfer of technology*” which may not work for many social, economic and cultural reasons. Some rural



communities of the world who have been using human excreta for centuries belong to a third category. This is where the relevance of dry toilets in ODF villages is enormous and limitless.



**Figure 15. This startling innovation of using ash in dry pit latrine and covering the pit with a fly proof lid by a farmer in Skun village, Banteay Srei, Cambodia, the 1<sup>st</sup> ODF village has been spreading not only in Cambodia but in many countries in Asia and Africa. Watch the bucket full of ash kept inside.**