

## Announcement of Results of the International Sanitation Innovation Contest

by Valentin Post (WASTE), Gita Balakrishnan (ETHOS),  
Shyama V. Ramani (UNU-MERIT & FIN) and Madhu Mani (IDEAKEN)

05 April 2011

Based on the remarks of all the judges

See the Introductory video on FINISH by Howard Hudson on  
<http://www.merit.unu.edu/> under Events & networking  
'FINISH: Sanitation Challenge'

---

### 1. WINNERS

**1st prize in systems : No. 64: Combined shower, urine diversion, dry latrine and drip irrigation system to Benjamin Clouet from France **6000 Euros****

**1st Prize in superstructures: No. 34: Cook & SOAPI integrated system with rainwater collection, separation of urine / faeces, and production of biogas to JELMER trainees from Netherlands **1750 Euros****

**Second prize systems: 61: Easy (to buy, build and use) latrine to Yi Wei from Cambodia **750 Euros****

**Second prize collection systems: 41: Plastic liner to Dylan Marriner from USA **750 Euros****

**Second prize superstructures: 16: Dry composting toilet building for schools or other public facilities to Henry Hill Pierce from USA **750 Euros****

**Implementation award to 75: SCOPE UDDT or ECOSAN model to M. Subburaman  
[scopeagency1986@rediffmail.com](mailto:scopeagency1986@rediffmail.com) **No cash prize but funds will be raised to implement the winning models in the town of Musuri where Mr. Subburaman operates SCOPE.****

## 2. Analysis

### *1st prize in systems*

#### **64: Combined shower, urine diversion, dry latrine and drip irrigation system.**

**What is striking in the entry:** The incorporation of a shower shows the insight of the contestant. Sanitation does not start and end with a toilet. Considering the fact that rural populations look more and more for solutions that are not only responding to their sanitation needs but also to their personal hygiene needs, this option offers the possibility of combining the two in an innovative and cost effective way, through the combination of shower (grey water disposal) and urine.

**What makes it innovative:** This sanitation design offers the possibility of a drip irrigation system, using water run-off from the shower together with urine that allows for gardening and therefore income generation activities. The fact that there is no direct handling of urine (that has proven to be cumbersome in many projects) is a true and clever innovation. It also allows for a rapid dilution of urine in the water run off, therefore avoiding discomfort.

**What's already known:** The use of a double pit is a tested solution for sludge management at community level, avoiding unsafe handling and providing sufficient time for sludge maturation into compost to become usable as fertilizer, through the alternate use of pits.

**What makes it replicable:** As a whole, the devise is simple, easy to build, relatively low cost, and possible to manufacture within a community using local tools and skills. The technical guidance manual that was provided is already well done and user friendly.

**What needs more thought:** What requires some improvement is that a somewhat larger and different type of filter should be included in the design to deal with soaps etc emanating from the showers. Also the segregation between shower and toilet area will require local fine-tuning. Finally the distance between the pits will need to be enlarged.

Yet this option is the most innovative one as it offers a comprehensive system that responds to personal sanitation, hygiene, ecological, income generation needs at a relatively low cost. It offers a high potential of scaling up. Congratulations to the innovators.

\*\*\*\*\*

### *1st Prize superstructures*

#### **34: Cook & SOAPI integrated system with rainwater collection, separation of urine / faeces, and production of biogas.**

**What the entry is:** This integrated sanitation option can, according to its designers, be done at household and / or community level, offers the possibility of collecting water for multiple hygiene and horticultural purposes. It separates urine and faeces for their subsequent reuse, the latter either for fertilization or the production of biogas.

**What's known already:** The technology is basically UDDT with biogas plant and in that sense has only a limited innovative aspect.

**What is innovative:** The household and / or community option is an original idea. The technical feasibility of upscaling and downscaling is indicated, yet this is unknown at present. Nevertheless the concept is quite comprehensive (including use of rainwater harvesting) in its outlook.

**What else is attractive:** It is attractive in its integrated concept and in its use of sustainable products for its construction, such as protected cardboard, sandwich material of corrugated fiberboard skins, lightweight but stiff honeycomb cardboard, cardboard tubing. Though this material may or may not be readily available, whenever it can be had, it could reduce the cost of the superstructure significantly. In addition, it has integrated rainwater harvesting to the superstructure design.

**What needs further thought:** Though applicable to individual households, it will be better suited to groups of households as community toilets, as the production of faeces from a sole family is not sufficient to have an effective and efficient production of biogas. Thus, at Communal / neighbourhood level, this becomes more interesting. Economies of scale could be gained as well for the initial investment in building the system.

In conclusion, this system is innovative in the sense that it integrates many aspects of sustainability, and uses unusual material, hence we congratulate the designers on their solution and award them first prize in the category superstructure

\*\*\*\*\*

### *2nd prize in systems*

#### **61: Easy (to buy, build and use) latrine**

**What is innovative about the entry:** The innovative aspect of this sanitation option is its easiness to build and use as well as its low cost for a good quality product.

**What is not innovative about the entry:** The technology as such does not represent any major innovation, and hence it cannot compete for first prize.

**How we see the innovation:** Yet we place its innovativeness more in the way this product has been studied from both demand and supply side and subsequently marketed. Usually, latrine and sanitation products are sold using shame and blame techniques (Community Led Total Sanitation), or using health / comfort / status criteria, but they are rarely sold as an easy and friendly accessible product.

**What we appreciated:** The story of Cambodia shows that this marketing technique is working. The details and reference material provided does facilitate an easy replication.

**What is missing:** The author should also have described the upstream work that needs to be made for manufacturing, marketing and distributing purposes.

In conclusion, this sanitation option could help to scale up rapidly the efforts to improve Sanitation MDGs through development of the supply-side chain in tune with demands of end-users. To succeed beyond the marketing potential, it should include an integrated aspect to sanitation development.

We congratulate the contestants on their solution and award them second prize in the systems category for the marketing potential it offers.

\*\*\*\*\*

### *2nd prize collection systems*

#### **41: Variation on Vietnamese double vault composting toilet**

**What the entry is:** The solution describes a urine diversion composting toilet. In essence the solution would be a minor diversion from the well-tested Urine diversion dehydration toilet as promoted in India.

**What is innovative:** Instead of building above the ground chambers the designers are suggesting to dig holes that can function as chambers. The real innovation in the design lies in the choice of material, i.e. HDPE 30 mil. This could reduce construction costs.

**What is already known:** HDPE 30 mil appears to be a trademark. However there are several companies in India making HDPE liners and local offers could be obtained too.

**What we agree about:** They correctly state that superstructures should be as per the user preferences and wishes and preferably be low cost (unless the users desires otherwise, and pays for it, of course).

It is believed that the widely practiced anal cleansing in India would not cause insurmountable operational problems, though if it does a three hole slab would be a solution.

**What needs more thought:** We would like to clarify with the designer how he /she foresees the emptying of the vault as it is dug in the ground and may not be easily accessible for emptying.

Furthermore we would also like to clarify how the designer proposes to protect the HDPE from perforation by sharp objects in the soil or during emptying of the vault.

**The jury was highly divided on this solution. As some of the jurors were impressed with the recommended use of plastic liners as a way to reduce costs, we decided on second prize in the collection category.**

\*\*\*\*\*

## *2nd prize superstructures*

### **16: Dry composting toilet building for schools or other public facilities.**

**What is innovative:** The design adopted has highly original ideas like an easily operable tank switching system. This option is innovative; it uses the high temperature principle generated by black metal painted chimney for the killing of human pathogens in a very daring and innovative technical design, as well as an intelligent cross-ventilation and use of rainwater harvesting.

**What is well known:** The approach is standard UDDT.

**What is missing or requires more thought:** There is limited information on building costs and skills required in construction. The designer should clarify how the air will pass through the toilets to the vaults below as most of the time the vaults will be closed / toilets will be sealed. The metal plates of the tank switching system should be corrosion proof.

Whilst the drawings offer some explanation it is rather complicated for the jurors to see how it could be built in practice, thus we award the designers second prize in the superstructure category particularly for the cross ventilation aspects, and the details of the switch system as well as the attention given to pathogen elimination through high temperature.

We congratulate the contestants on their solution and look forward to further interaction.

\*\*\*\*\*

### *Implementation award to 75: SCOPE ECOSAN model*

**What is innovative:** Although in a way, this proposal is rather “orthodox” in terms of the application of the ECOSAN principles, it offers an innovative variation (3 in 1): a) urine collection done through mud pot with holes buried in the earth; b) wash water collected separately; and c) drop hole for faeces.

**What is well known:** SCOPE proposes a model based the implementation of the innovative ecological sanitation concept and philosophy.

**What we appreciated:** SCOPE rightly highlights the important component of hygiene and sanitation education. It also explains how to use and maintain a UDDT / ECOSAN, based on practical experience.

The cultural dimension is essential and should be tackled as well; water is used for every act of cleaning and there is a strong taboo in for instance Indonesia about the reuse of human

faeces (unlike in China or Vietnam). This situation could be the same in some areas of India, especially in the northern part.

In conclusion, this option presents a possible variation of the classical model of ECOSAN based on the innovative principles of ecological sanitation, using local material for its construction. In a way, this option or should we say this approach remains innovative, but to spread more readily outside its area of operation still has to address more thoroughly the cultural issue to ensure its success.

**Thus we congratulate SCOPE with the achievements in Southern India, we gratefully acknowledge the details provided and award SCOPE the special implementation award.**