

REPORT OF NATIONAL LEVEL TRAINING ON ECOLOGICAL SANITATION FOR CCDU OFFICIALS

Organised and conducted by



Water, Sanitation and Hygiene (WASH) Institute,
Kodaikanal, Tamil Nadu
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Sponsored by



Department of Drinking Water Supply,
Government of India

Venue

Hotel Femina & Hotel Breeze Residency
Tiruchirapalli, Tamil Nadu



Dates :

Batch I : 16-18th Feb.2009

Batch II : 18-20th Feb.2009

Batch III : 20-22nd Feb.2009

Batch IV : 22-24th Feb.2009

Batch V : 26-28th Aug. 2009



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Background

The people without sanitation in the worlds are about 40%. About 6,000 children die every day from diarrhea diseases. By 2030 more than half the world's population will face a shortage of water. Only 300 million people have some sewage treatment arrangements. The sanitation approaches promoted today are based on hiding excreta in deep pits or flushing them away and diluting them in rivers, lakes and seas. During the 20th century we have witnessed several public health revolutions like childhood immunization, green revolution etc. Ecological sanitation could be the beginning of a new public health revolution. There is a need for spreading the awareness on ecological sanitation especially in a developing in the country like India, as the lack of sanitation is one public health problem affecting more than half the population.

1.0 Introduction:

Ecological sanitation is an approach that offers many advantages over and above sanitation provision, an otherwise much neglected issue by closing the nutrient and water cycles. Ecosan recommends that human excreta and household organic waste be sanitized and the nutrients be applied in agriculture. Ecosan is a less understood concept in India. The dissemination of this knowledge at various levels especially with decision makers and all stakeholders of the Total Sanitation Campaign can greatly help in environment friendly options. A movement and campaign on Ecological Sanitation is seen as the demand and need of the coming times.

A three days training on "**Ecological Sanitation**" for all state Communication and Capacity Building Development Units (CCDUs) officials from states of India was organized by Water, Sanitation and Hygiene (WASH) Institute with the financial support from Department of Drinking Water Supply, Government of India through Plan India, New Delhi. The whole training programme was conducted in four Batches for three days each, starting from 16th February-2009 to 24th February-2009.

The training was planned for 120 officials in four batches, considering the needs and demand we have organised total of 5 batches and trained 139 participants.

The three day training included theoretical and practical knowledge sessions with games and films on the subjects for two days, while the third day was spent in visiting fields (Musiri town Panchayat, Tiruchirapalli District) for ecosan individual toilets, community toilets, waste management, and visit to Banana field research areas.

2.0 Inauguration Session on 16th February 2009

On the 16th February 2009, in the inaugural session Mr.Arumugam Kalimuthu, Technical Advisor, Water and Environmental Sanitation, Plan India gave the welcome address. The facilitation address made by Mr.Prakash Kumar, UNICEF-SEI Consultant and Mr.M. Subburaman, Director SCOPE NGO. Mr. Panneer Selvam, Executive Engineer, Tamil Nadu Water Supply and Drainage Board gave the key note address. K.Y.Babu, Training Coordinator of WASH Institute proposed vote of thanks.

3.0 The Participants

The participants from CCDUs, PHED/Water Boards, Agriculture Departments and TSC/DRDA divisions from 17 states namely Andhra Pradesh, Chattisgarh, Delhi, Gujarat, Haryana, Himachal Pradesh, Jharkhand, Karnataka, Manipur, Madhya Pradesh, Mizoram, Orissa, Pudhuchery, Rajasthan, Sikkim, Tamilnadu and West Bengal. Including the participants and resource personals, a total of 139 people attended in the 5 batches training as enclosed in the list (Annexure)

4.0 Training Content – Brief Report

The program schedule for all the five batches were similar, in order to avoid any repetition of information in the report, an attempt has made to consolidate two days theoretical session and a field visit details briefly in the following paragraphs.

4.1 Day One

The program began with an ice breaking session, where participants introduced themselves and shared their interests, by means of a game. Labels containing key terminology/concept related to ecological sanitation were pasted in each participant's forehead and they were asked to identify the individuals who are having similar labels and they were asked to form small groups. The groups then got together to discuss their knowledge on the concept/terminology listed in the labels as pre assessment to training.



After tea break, the session on **Faecal oral transmission (F-Diagram)), and Sanitation Technical Options, difficulties in various existing sanitary options**



were presented by Mr. Arumugam Kalimuthu. The detail faecal oral route of transmission through flies, pet animals, fruit and vegetables, fingers, water and food and how they create various diseases was explained. A cartoon film on this issue was presented. The reasons, why the F diagram is important as it explains transmission route besides the barriers need to be

created for prevention. Also, type of diseases such as water borne diseases, water washed diseases, water based diseases, water related vector borne diseases, soil based and chemical/mineral based diseases were discussed thoroughly and root cause for these diseases, diseases symptoms, preventives and curative measures were discussed during the session.

Introduction to eco-san Mr. Arumugam Kalimuthu was made **on the various existing sanitation options, and the limitations.** The key features of Ecosan, NPK (Nitrogen, phosphorous, Potassium) levels of Ecosan, Urine separation, Double vault Ecosan toilet, Decomposition, Biogas connection with toilets, and community ecosan toilets were introduced with technical details and pictures. The importance of closing the loop and moving from water based sanitary system to nutrient based sanitary systems were highlighted. Discussing various Ecosan options, why the Ecosan is superior and how environmental friendly was also shared with the participants. Based on the learning from first half day session and having understood the basic concept of ecological sanitation, the participants were asked to discuss in small groups and list some of the key challenges in promoting Ecosan. The key challenges listed by the participants were addressed in the subsequent topics.



After lunch, **Construction of Ecosan toilet was demonstrated** by KY Babu by showing a film, which helped persons to visually understand the step by step process in construction. The technical session on this topic includes site selection, casting of squatting slab, construction of the twin chambers, casting of roof, floor finishing, fixing of urine and wash water pipe, urine

collection, toilet, materials required for household level Ecosan and other aspects of construction besides way of using was explained.

This was followed by a session on **Reuse of decomposed Waste and Economic value of Human Waste** by Mr. Prakash Kumar, UNICEF-SEI consultant. This was a completely new and interesting topic for most participants, who gained new knowledge. On an average a person generates 500 litres of urine and 50 kg of faeces a year. This is valuable resource and not waste, he narrated how these valuable resources can be harvested and handled. Nitrogen, Phosphorous and Potassium (NPK) values in the human urine and faecal matter was also shared by him.



Various models of Ecosan toilets in India and around the world were shown on power point presentation. Low cost technology such as Bamboo reinforcement used for the chamber reduced the cost considerably as in the Assam model of ecosan, Mr. Prakash pointed that it is important to give the concept to people and not so much insist on any stereotypic model. Modern Ecosan concept came about around 50 years ago. However it was earlier used by Japanese even before second world war, while in China it is as old as 3000 years. Ecosan system is environment friendly and aims at

closing the loop. The faeces and urine will not be discharged into environment instead it will decompose and reused as fertilizer so that the environment cycle is maintained. Ecosan is suitable for all. He narrated the history of Ecosan, was first demonstrated in Kerala in 1995, now there are about 2000 of the 3000 ecosan toilets which are done only in Tamil Nadu. One of the main advantages is that it stops environmental pollution, and is very useful to agriculture. Thus he traced the history of Ecosan its concept and advantages.

This was followed by a **presentation on Ecosan case study from South India by SCOPE**. Mr. Suburaman gave the presentation. His presentation on the concepts, the problem of pit and septic tank toilet and unhygienic way of block water disposal was highlighted. He mentioned that earlier ecosan toilet cost was only Rs. 4000/, now cost has increased due to increased costs in general. Various models all over Tamil Nadu were shown which included those in schools, community toilets and individual household models, toilet models for physically challenged and vaults with sloping cases to help quick decomposition were shown. To promote Ecosan some strategies like holding a toilet beauty contest is being organised by SCOPE. Mr. Subburaman made a comparative cost analysis between Ecosan and other sanitary options, it showed higher value and sustainability for the ecosan toilet especially in terms of social and economic costs. Mr. Subburaman also shared some of the key aspects of community motivation and also answered some of the challenges / questions such as in the urban area, where we go for ash etc..

This was followed by a detailed ***Dos and Dents in Ecosan*** demonstrated by pictures by Mr. Prakash kumar. This included aspects like prevention of water entry in the pits and use of ash as a decomposition material. The last session was on questions and answers which was an open session. After which the day one of the programme came to a close with a summing up session.

4.2 Day Two

It started with a Recap of the first day. Dr. C.A. Srinivasa Murthy of GKVK, University of Agricultural science, Bangalore **presented on human urine application fro crop production & a reseach project carried out in Karnataka**. He referred urine application for cropping as "yellow revolution" and said that It is liquid gold. He explained relationship of four Ps, population, poverty, production and pollution, Urine as excellent source of fertilizer, Pollution of water bodies due to human waste, the mineral content in urine and how it can be used; Urine application on spinach by Mr. Peter Morgan in Africa and his study results, urine application on maize crops, use on Banana were some of the topics presented. He explained the history, were



earlier no fertilizers were used till 1950s, after which fertilisers were used and govt. reduced the cost of fertilizers to make it affordable to the common farmer. Soon availability of phosphates requirement will be an issue it is a key element in short supply produced only by few countries. All our activities results in contamination leading to bad health of the people. If urine is harvested by the whole country we can harvest 1500 tones of nitrogen which means surplus can be exported, which was a revelation. Hence urine is found to be a wholesome fertilizer from the research carried out. Waste water also needs to be treated. We can thus avoid all nutrients all reaching the sea finally. There is need to separate urine and faeces and use it for agriculture. We should deal that urine as a liquid fertilizer and Faeces as a Soil conditioner. Ecosan should be taught in all colleges and universities besides roof water harvesting techniques. The human urine was more superior than animal urine. Storage, use and application of urine were further explained in detail. Dr. Murthy presented a research work done by GKVK on human urine collection, transport, storage and application for crops and the findings from the research work.

Using Ecosan Community Toilet and getting paid presented by SCOPE, Mr. Subburaman. The urine collection in the public toilets was a notable and innovative feature. Here user was getting paid for using the toilet or urinating, instead of paying



after use. This buying of urine was done as to bring awareness to people on the value of urine as a fertilizer. This collected urine was used in the research project to study the dosage required for various types of plants which was part of the field visit. He also explained how the research on banana showed a higher yield with application of urine. The study in the farm was in process with the agricultural university. At SCOPE office

the application of Maple EMI floriculture liquid which was a microbial inoculants which was used for hasten the process of decomposition. This liquid was added to one kg. of jaggery with 25 litres of water. Maple liquid is added to this mixture and used for decomposing the manure faster. Mr. Subburaman narrated the history of the “use and get paid toilet”, the process adopted to develop this concept, implementation, monitoring, operation and maintenance of the urban Ecosan community toilet.

Prof Abdul A. Rahman From SRM University Chennai at Katankulathur delivered a lecture on Urine, urine is gold, its chemical composition, the value of urine its characteristics. There are many minerals in urine, like urea ammonia etc. It



can play a great role in the economy. It is a good soil conditioner. By use of certain chemicals like magnesium phosphate the urine can be converted into powder form which would be easy to store, transport and apply in the field. There are 20 amino

acids in urine. Urine should always be yellow in colour and it has faint aroma. . Mr. Rehman gave many details on the technical aspects of urine and its usage. He also shared the research work he is involved in separating nutrients from urine.

Retired correspondent of the Hindu Mr. V. Ganapathy also been a associated with the NGOs in Trichy on water sanitation since 1996, expressed his journalistic views. He shared that ecosan measures especially in times of tsunami were very required. Waste management is crucial need for the country. **Mr. Ganapathy** apart from highlighting some of the key steps we need to follow for the promotion of Ecosan, he also narrated the technical details of decentralised waste water treatment system (**DEWATS**) to treat the block and gray water in peri-urban area.

Mr Prakash Kumar covered the topic on **Ecosan in urban areas -China experience** by showing various models and techniques from various countries and in particular the china model was shown. This session was followed by a urban Ecosan film. Mr. Prakash Kumar also highlighted some of issues associated with suitability of ecological sanitation and ways and means to address these issues.

A short film on Victims of garbage dump was shown. This movie showed the tragic state of adults and children engaged in this hazardous job of collecting wastes to make a living. Mr. A Kalimuthu then presented the **integrated approach of water sanitation and hygiene** need to be followed in this sector to achieve higher results. Need for demand generation by raising awareness, integrating water, sanitation and hygiene, including school hygiene, disaster situation sanitary options and its linkages with MDGs were discussed in this session. The fast urbanisation, the expected role stakeholder in promoting ecological sanitation was also discussed.

Later, the participants were advised to revisit the first day groups works (The Challenges) to make sure that all their questions were addressed by the resource persons. Later, the participants were asked to pick the first day introductory game themes (labels) to evaluate themselves whether they have better knowledge after the two days theoretical sessions. At the end of second day, the field visit schedule and visit details were shared with the participants.

4.3. Day Three - Field visit to Musiri

4.3.1 Household Ecosan toilet in Kaliyapalayam.



The participants visited the household Ecosan toilet at Kaliyapaliyam village. A Ecosan toilet constructed by Ms. Manglathama in the year 2003, one of the chamber closed for decomposition has attain more than 8 months, the participants were asked to open the chamber – to witness, the decomposed faecal matter in the Ecosan. Most of the participants, with out any hesitation have touched the manure.

4.3.2 Community Ecosan Toilet in Saliyar Street

The second place visited was the community Ecosan toilet at Saliyar street, Musiri. On an average , 300 persons per day uses this community Ecosan toilet. This sanitary complex is well maintained by community and SCOPE. Urine harvested from this community complex is used for research project in Agriculture University. The participants had an interaction with the users, the caretakers and went through the documents maintained at the complex.

4.3.3 Urine application to Banana Plant - Research

After the community complex visit, the participants were taken to Banana research farm, where urine harvested from the community toilet is used as liquid fertiliser for banana plantation. The field visit to Musiri helped the participants could very well witness the usage of household and community Ecosan toilets and application of urine and decomposed waste for plant growth.

4.3.4. DEWATS Site

Lastly participants were taken to the site where DEWATS (Decentralized Wastewater Treatment Systems) and Solid waste management have been practiced. Three tons of waste collected from Musiri town is segregated, packed/decomposed and recycled. The Musiri town Panchayat is generating income besides cleaning up the town from hazardous wastes.



Vermiculture manure solid out here is considered as best manure by the farmers around this region. The participants have seen the DEWATS plant which is in operation in the same spot, where the solid waste management system is in operational.

5. Participants Feedback on Challenges of ECOSAN:

The feedback on challenges as expressed by batch five participants:

- Changing mindset of the People
- Shortage Technological Knowledge
- End product acceptability by user
- Whether the Ecosan is cost effective or not?
- Is the Unit Cost borne by the individual affordable?
- Practicability /processing of ecosan products.
- Familiarisation of the masses to create awareness
- IEC activities must be emphasised for using in rural areas

- Strict legislation should be imposed to use toilets
- People should be motivated for change
- NGOs should be involved more to popularise by adopting model villages.
- Educate the people about Sanitation
- Selection of site for Ecological Sanitation
- To Stop open defecation
- To educate people about NPK value of human waste and reuse it in Agriculture work.
- Skilled mason requirement for construction of Ecosan
- Capacity Building needs.
- Policy and Guidelines
- Acceptability of the compost developed should be demonstrated (marketing linkages of ecosan products) and convergence.
- Technological Options for Ecosan
- *Problems in Hilly Region:* Scarcity of water in winter season causes problems to maintain toilet.
- *Rural Area:* Lack of awareness, ill literacy, Affordability, Stigma attached to the concept.
- Model village has to be setup.
- Subsidy may be given for the construction

6.0 Course Evaluation & Certificate

At the end of training session of each batch, an evaluation form was circulated to all participants to get their feedback about over all training program. Ecological Sanitation training organised by WASH Institute with the support of DDWS was rated "very high" by the course participants (refer attached chart in the annexure).

At the end of 3 days successful training program, the participants were given a certificate from the WASH Institute.

The same process were followed for all the 5 batches of the training program

7.0 Valedictory Function on 24th February 2009

The final day of the 5th batch training, valedictory function was planned with District Collector. Due to some unavoidable reasons, he could not make it for the function; Superintendent Engineer of TWAD board Mr. T.S. Sekar attended as chief guest in the function and distributed the certificate for 4th batch participant and Mr. Sunil Menon of DDWS has distributed certificate to 5th batch participants. Mr A Kalimuthu

gave his speech on the four batches training and its outcome and also narrated the forthcoming activities of WASH Institute, besides a few of the participants gave feedback on the training. Mr Subburaman gave closing remarks, and the vote of thanks was made by WASH Institute program coordinator Ms. Berna Mary.

Print Media

The training program has received a good reorganization from the print media. The details were published in *The Hindu*, *The India Express* and number of Tamil dailies such as *Dina Thanthi*, *Dina Malar*, *Dina Mani* etc.

Some Evaluations feed back of participants:

On suggestions for improvement:

Many suggested arranging programme for at least a week long. Arrange in other districts too.

On interest to receive our future training course

Yes, on garbage disposal and ecosan toilets, on water quality and sustainability, on monitoring & evaluation, etc.

On asking the learning that you are going to implement in your area

- Ecosan village level construction under the TSC in future. The availability of the apparatus, materials & Plans.
- Replication of ecosan in the area of Hilly region of Arunachal Pradesh, J&K etc.,
- The use of Ecosan compost in the farmers field
- To implement ecosan in Horticulture
- Urine application and human manure use as a alternative for chemical fertilizer.

CONCLUSION:

WASH Institute is indeed very grateful to the Department of Drinking Water Supply, Government of India for giving the financial support through Plan India New Delhi and also this great opportunity to engage in the capacity building of CCDU officials for promotion of ecological sanitation. As many as 139 officials from the various states of India had actively participated in the training and gave a very positive and encouraging feed back about the training usefulness and the awareness gained on Ecological sanitation. The topic is a new and innovative subject whose awareness needs to spread throughout the country as one of the means of sustainable sanitation. We hope that now there will be more advocates and the message will spread and more innovative technology will be invented for application at various situations.

Training on Ecological Sanitation for CCDU Officers



Batch I - 16th to 18th Feb 2009	
Sl.No	Name Designation and address of the Participants & Resource Persons
1	Mr. R. Carthigayane, Grama Sevak, Block Development Office, Aaankuppam, Puducherry
2	Mr. L. Vengada Bharathy, Grama Sevak, BDO Office, Oulgarate, Puducherry
3	Mr. Manoj Agaja, State Consultant, TSC – Commisnorate of Rural Development, Govt. of Gujarat, Gandhinagar, Gujarat
4	Mr. Mahendra Gajjar, TSC Cell, Gandhinagar, Gujarat
5	Mr. S. Panneer Selvam, TWAD Board, RWS Division, Tiruchirapalli, Tamil Nadu
6	Er. K. Syed Sulaiman, Assistant Executive Engineer, CCDU TWAD Board, Madurai, Tamil Nadu
7	Er. R. Solaiappan, Assistant Engineer, CCDU TWAD Board, Madurai, Tamil Nadu
8	Mr. Uday Singh, District Coordinator, Palamu, Jharkhand
9	Mr. Shahid Ali, District Coordinator, Latehar, Jharkhand
10	Mr. Krishna Kumar Gupta, District Coordinator, Garhwa, Jharkhand
11	Mr. Manoj Chandra Kuwar, District Coordinator, Lohardaga, Jharkhand
12	Mr. A. Simon Jesuraj, Grama Sevak, Karaikal, Puducherry
13	Mr. V. Eugene Kennedy, Grama Sevak, Karaikal, Puducherry
14	Mr. R. Chandrasekaran, Grama Sevak, Karaikal, Puducherry
15	Mr. V. Ramalingam, CCDU Unit, Tiruchirapalli, Tamil Nadu
16	Mr. V. Ganapathy, SCOPE, Tiruchirapalli, Tamil Nadu
17	Mr. M. Subburaman, SCOPE, Tiruchirapalli, Tamil Nadu
18	Mr. Arumugam Kalimuthu, Plan India, New Delhi
19	Mr. Prakash Kumar, UNICEF-SEI Consultant, New Delhi
20	Dr. C.A. Srinivasamurthy, GKVK, Bangalore, Karnataka
21	Mr. K.Y. Babu, WASH Institute, Kodaikkanal, Tamilnadu
22	Mr. V. Gopala Krishnan, WASH Institute, Kodaikkanal, Tamilnadu

Training on Ecological Sanitation for CCDU Officers



Batch II- 18th to 20th February 2009	
Sl.No	Name Designation and address of the Participants & Resource Persons
1	Mr. L. BROJENDRA SINGH, Executive Engineer, PHED, Manipur
2	Mr. L. SHEKHOR SINGH, Executive Engineer, PHED, Manipur
3	Mr. N. BIPIN SINGH, Executive Engineer, PHED, Manipur
4	Mr. S.K. GHOSH, Consultant, CCDU, PHED Kolkota, West Bengal
5	Mr. RAM KUMAR, District Coordinator, Hazaribagh, Jharkhand
6	Mr. K. GUNASEKARAN, Vazhaiyur Panchayat President, Vazhaiyur, Tiruchi District
7	Mr. A. BALASUBRAMANIAN, Block Coordinator, DRDA, Tiruchi
8	Mr. S. JAYACHANDRAN, President, Valadi Panchayat, Tiruchi District
9	Mr. S. KARUNAKARAN, AE, TWAD, Tiruchi,
10	Mr. K. MATHIYAZHAGAN, AEE, TWAD Board, Tiruchi
11	Mr. ARU. SUBRAMANIAM, Assistant Engineer, TWAD Board, Tiruchi
12	Mr. V. RENGANATGHAN, AEE, TWAD Board, Tiruchi
13	Mr. V. NAGARAJ, Asst. Engineer TWAD Board, Tiruchi
14	Ms. P. SIVAKAMI, Asst. Engineer, TWAD Board, Tiruchi
15	Mr. D. ASHOK KUMAR, President, Serugudi Panchayat, Tiruchi district
16	Mr. UMESH KUMAR, District Coordinator, DWSSM, Prakalp. Jharkhand
17	Mr. R. SANKARANARAYANAN, AEE, TWAD Board, Tiruchi
18	Mr. PRAKASH KUMAR, UNICEF-SEI Consultant, New Delhi
29	Mr. ARUMUGAM KALIMUTHU, Plan India, New Delhi
20	Dr. A. SRINIVASA MURTHY, GKVK, Bangalore, Karnataka
21	Mr. M. SUBBURAMAN, Director, SCOPE, Tiruchirapalli
22	Mr. K.Y. Babu, WASH Institute, Kodaikkanal
23	Mr. V. GOPALA KRISHNAN, WASH Institute, Kodaikkanal

Training on Ecological Sanitation for CCDU Officers



Batch III- 20th to 22nd February 2009	
Sl.No	Name Designation and address of the Participants & Resource Persons
1	Ms. A. Prabavathi, Agri. Officer, BFP Unit, Tiruchi
2	Ms. B. Vasantha, Soil Testing Lab, Tiruchi
3	Mr. Layeeque Ahmed, DWSM, Parkalp, Gumla, Jharkhand
4	Mr. A. Natarajan, Asst. Exe. Engineer, TWAD Board, Musiri
5	Mr. R. Venkatachalapathy, Asst. Engineer, TWAD Board, Tiruchi
6	Ms. J. Jayarani, Asst. Engineer, TWAD Board, Tiruchi
7	Mr. L. Vallavaraj, Asst. Engineer, TWAD, Tiruchi
8	Mr. P. Kirubaharan, Asst. Engineer, TWAD Board, Tiruchi
9	Mr. T. Pitchaimanickam, TSC Block Coordinator, Viragalur, Tiruchi District
10	Ms. T. Manjula, Panchayat President, Musiri Union, Tiruchi
11	Mr. T. Vijaraghavan, Asst. Exe. Engineer, TWAD Board PF Dvn, Tiruchi
12	Mr. Avudai Nayagam, Program Officer, WPI, Tirucirapalli
13	Mr. Subramaniam, Project Coordinator, REAL, Dindigul
14	Mr. M. Subburaman, Director, SCOPE, Tiruchi
15	Mr. V. Ganapathy, Journalist, Tiruchi
16	Ms. R. Nirmala, TSC – BC, BDO Office, Musiri
17	Mr. S. Ramkumar, District Coordinator, TSC, DRDA, Tiruchi
18	Mr. Prakash Kumar, UNICEF-SEI Consultant, New Delhi
19	Mr. Arumugam Kalimuthu, Plan India / WASH Institute
20	Mr. K. Y. Babu, WASH Institute, Kodaikkanal
21	Mr. V. Gopala Krishnan, WASH Institute, Kodaikkanal

Training on Ecological Sanitation for CCDU Officers



Batch IV- 22nd to 24 th February 2009	
Sl.No	Name Designation and address of the Participants & Resource Persons
1	Mr. P. Sankarababu, Deputy Executive Engineer, Guntur, Andhra Pradesh
2	Mr. Ramashrya Prasad, District Coordinator, DWAW SMP, Godda, Jharkhand
3	Ms. Shikha Nayak, Technical Advisor, SSHE, Bhubaneswar, Orissa
4	Mrs. Preeh Wakhale, Faculty Member, SIRD, Jabalpur, Madhya Pradesh
5	Er. Mersen, Project Engineer, DWSM, Rural Division, PHED, Dimapur
6	Mr. I.M. Prahalad, Consultant, CCDU, KRWSSA, Karnataka
7	Mr. Ranjit Singh, Asst. Project Officer, DRDA, C/o ADC Mini Sec., Fatehbad, Haryana
8	Mr. Ramjilal, Sub Divisional Officer (PR), Hisar, Haryana
9	Mr. Wakeel Ahmad, State Coordinator, CCDU Raipur, Chattisgarh
10	Mr. Mritunjaychandra, Regional Coordinator, WASH, Jagdalpur, Chattisgarh
11	Mr. Narendra Singh Chouhan, Regional Coordinator, WASH, Bilaspur CCDU, Chattisgarh
12	Mr. Kamlesh Mishra, Regional Coordinator, WASH, Circle Durg, CCDU, Chattisgarh
13	Mr. Bhushan Pal, Project Officer, DRDA, Kurusekthra, Haryana
14	Mr. Ajay Kumar, Project Officer, DRDA, Panipat, Haryana
15	Mr. G.V. Venkateshwar Rao, DEE (RWS), Nalgonda, Andhra Pradesh
16	Ms. D. Thangarathinam, Assistant Engineer, TWAD Board, Tiruchi
17	Ms. S. Amuthavathi, Assistant Engineer, TWAD Board, Tiruchi
18	Mr. V. Arumugam, Assistant Engineer, TWAD Board, Tiruchi
19	Mr. S. Ravindran, Asst. Exec. Engineer, TWAD Board, Tiruchi
20	Dr. C.A. Srinivasamurthy, UAS, GKVK, Bangalore
21	Mr. N. Siva, AE / Maintenance Sub Division, TWAD Board, Tiruchi
22	Er. Ravi Singh, A.E., Sengar, Madhya Pradesh
23	Mr. Manoj Srinivastava, Field Coordinator, CCDU, Rajasthan
24	Mr. Kamal Kishore Sharma, Field Coordinator, CCDU, Rajasthan
25	Prof. A. Abdul Rahman, School of Civil Engineering University, Chennai
26	Mr. Prakash Kumar, UNICEF-SEI, New Delhi
27	Mr. M. Subburaman, Director, SCOPE, Tiruchi
28	Mr. Arumugam Kalimuthu, Plan India, New Delhi
29	Mrs. Berna Mary Ignatius, WASH Institute, Kodaikanal
30	Mr. K.Y. Babu, WASH Institute, Kodaikanal
31	Mr. M. Mathialagan, Coordinator, SCOPE, Tiruchi
32	Mr. V. Gopala Krishnan, WASH Institute, Kodaikanal

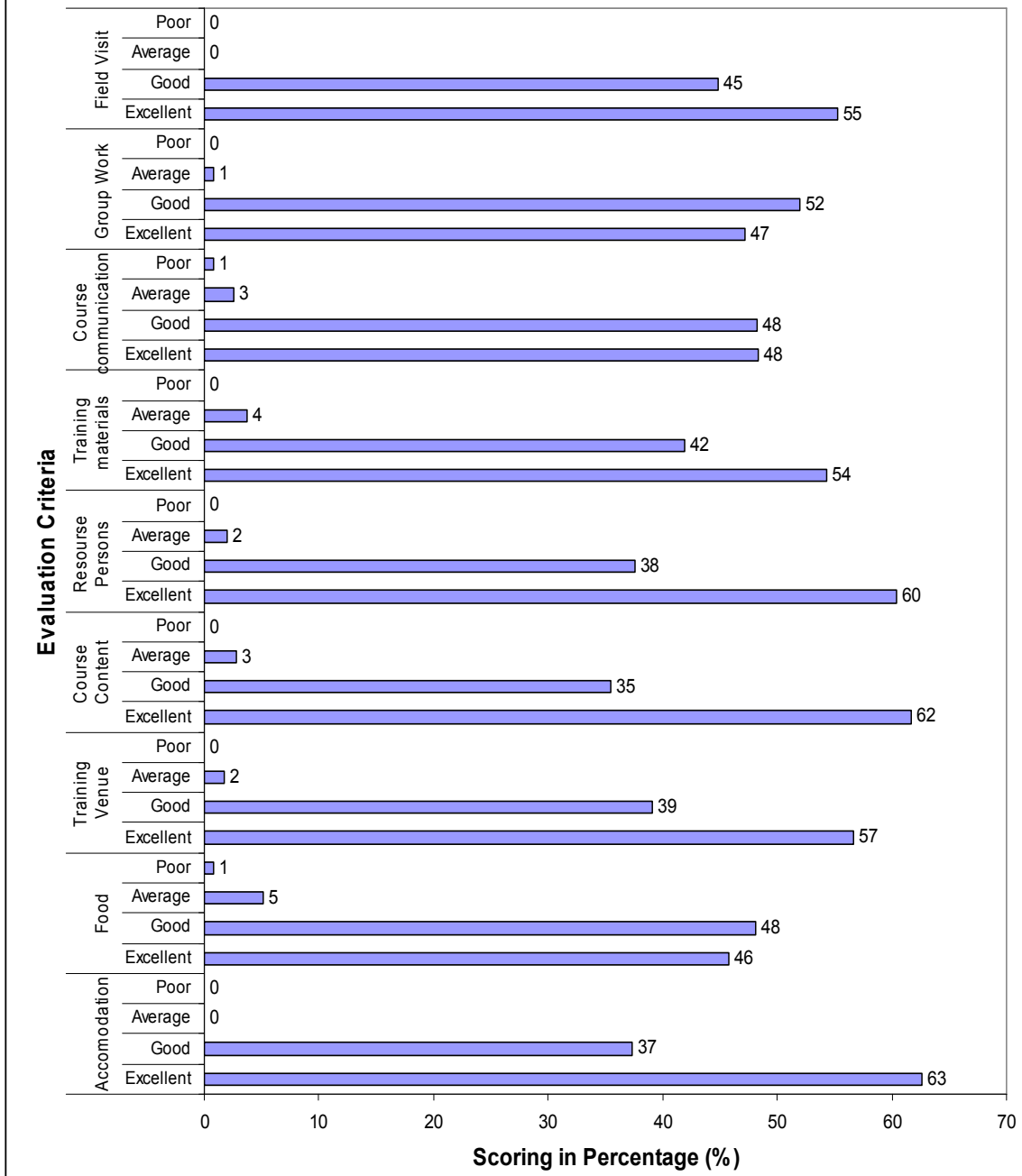
Training on Ecological Sanitation for CCDU Officers



Batch V- Aug 26th to 28th, 2009	
Sl.No.	Name, Designation and Address of the participants and resource persons
1	Dr. Gomadhi. G. , Soil Testing Lab, Tiruchirapalli, Tamil Nadu
2	Dr. Ramanathan. M.R., Agricultural Officer, O/O Joint Director Agriculture Tiruchirapalli, Tamil Nadu
3	Mr. Ajay Kumar Yadav, Asstant Engineer, D.W and S - Sub Division Gonda, Ranchi, Jharkhand
4	Mr. Alexander, Asst. Agricultural Officer, Thandigudi, Kodaikanal, Tamil Nadu
5	Mr. Balasubramanian. N.R., AEE, TWAD Board, PF Division, Tiruchirapalli, Tamil Nadu
6	Mr. Basavarajappa.T.S, Proj.Engr(Rep) & Coordinator, Zilla Panchayath, Davangere, Karnataka
7	Mr. Baskaran.R. , B.D.O., Ariyankuppam, Puducherry
8	Mr. Gaayas Pega, Block Development Officer, Kaluk – Sikkim
9	Mr. Itagi. S.B. , B.H.E.D., T.S.C. D.S.U.2P, Belgaum, Karnataka
10	Mr. Janakiraman. C. , Agricultural Officer, Fertilizer Control Laboratory, Tiruchirapalli, Tamil Nadu.
11	Mr. Jeyabalan. L. , Deputy Horticulture Officer - Kodaikanal, Tamil Nadu
12	Mr. Kanakaraj.S. , Block Development Officer Villianru, Puducherry
13	Mr. Kathirvelu. R. , Extention Officer. Block Development Office, Karaikal, Puducherry
14	Mr. Lokur. S.G., Assistant Executive Engineer, P.R.E. Suub Division - Hubli, Karnataka
15	Mr. Mahadev Govind Shinde, Extension Officer (V.P), Panchayat Samiti Mangaon, RAIGAD, MH
16	Mr. Mallikarjuna Rao. B. , Deputy Executive Engineer, RWS Sub Division, Singarayakonda, A.P.
17	Mr. Manivasagan. M., AEE / Consultant / CCDU / TWAD Board, Coimbatore, Tamil Nadu
18	Mr. P.K. Sinha, Assistant Engineer, R.W. & S Sub Division, Jamshedpur (Jharkhand)
19	Mr. Prabhat Ranjan Prasad, Assistant Engineer, DW & Sanitation - Swarnrekha, Ranchi, Jharkhand
20	Mr. Priyatu Mandal, A.D.C., Kaza, Himachal Pradesh
21	Mr. Robin Sewa, Block Development Officer, Namthang, Sikkim
22	Mr. Savari Rajan. S., Grama Sevak - Grade II - BDO Office Karaikal, Pudhcherry
23	Mr. Sittarandjane. K. , A.P.O. DRDA, Puducherry
24	Mr. Srikantamurthy. H.S., KRWSSA - CCDU - Bangalore, Karnataka

25	Mr. Srinivasan. R. , Assistant Engineer, TWAD Board, Tiruchirapalli, Tamil Nadu
26	Mr. Sushilkumar Jha, IDEA, Ranchi, PO: Bariatu 834 009 Jharkhand
27	Mr. Venkataramana. T., A.S. and I/C CPO, Zilla Parishad - Kolar, Karnataka
28	Ms. Srivaramangai, Project Director, INDIA ESRC, Chennai, Tamil Nadu
29	Mr. Junaid Ahmed Usmani, Consultant - M & E, DDWS, GoI, New Delhi
30	Mr. Sunil Menon, Consultant (HRD), DDWS, GoI, New Delhi
31	Mr. Kalimuthu Arumugam, Senior Program Support Manager, Plan India/ Mg.Trustee, WASH Institute
32	Mr. Prakash Kumar, Consultant - UNICEF-SEI New Delhi
33	Mr. Subburaman. M., Director, SCOPE, Tiruchirapalli, Tamil Nadu
34	Dr. Srinivasamurthy. C.A. Professor of Soil Science, UAS, G.K.V.K.Bangalore 560 065, Karnataka
35	Dr. Abdul A. Rahman, S.R.M. University, Kattankulathur Tamil Nadu
36	Mr. Ganapathy. V., Special Correspondent - The Hindu (Retd), Tiruchirapalli, Tamil Nadu
37	Mr. Babu. K.Y., Training Coordinator, WASH Institute, Kodaikanal, Tamil Nadu
38	Mr. Peter. L., Director, REAL, Dindigul, Tamil Nadu
39	Mr. Sahasranaman. A., (Retd.IAS), Tiruchirapalli, Tamil Nadu
40	Ms. Berna Mary Ignatius, Programme Coordinator, WASH Institute, Kodaikanal, Tamil Nadu
41	Mr. Gopala Krishnan. V., WASH Institute, Kodaikanal

Course Evaluation By The Participants



city

● 'WASH' INITIATIVE

Ecosan propagation through training programmes

Express News Service
Tiruchy, Aug 28

SANITATION is a vital component of a country's development programmes. Ours being a country that is rather slow in adjusting itself to the modern concepts of sanitation and public hygiene, it has become necessary to provide a sustainable sanitation system to the population of over 60 crore through a new technology. The need is all the more felt as the present sanitation systems require a large quantity of water for successful functioning. The disposal of human waste as practised today under the existing systems is a cause of grave concern as it has been leading to contamination of both underground as well as surface water.

To sensitise people over the issue, a National Level training programme on Ecological Sanitation (ES) was organised by Water Sanitation and Hygiene (WASH) Institute, Kodaikanal to train a total of 125 participants from 17 states. They were offered training in five batches in ES. The last batch that underwent training here had 34 participants from nine states. The programme conducted with the financial support of the Department of Drinking Water Supply, Government of India.

Addressing the participants at the valediction of the training programme, Prakash Kumar, Consultant, UNICEF-SEI, said that UNICEF was planning to take the training sessions at state level to provide a wider coverage. It would be covering states like Bihar, Orissa and other North Eastern states.



Sunil Menon, Department of Drinking Water Supply, Govt of India, giving away course certificate to a participant at the WASH training programme. Also seen are Arumugam Kalimuthu, Plan India, New Delhi and Prakash Kumar, Consultant, UNICEF, New Delhi

UNICEF India had been apprised in this regard, he said.

The implementation of the programme was rather slow but they were progressing. Shortly it would be a nationwide movement. In fact, there were more failures than success stories, Prakash Kumar stated. Only if a person was committed to the concept should one promote it. Commitment at state level was vital. UNICEF had lot of material on the ecosan theme and a documentary film was in the pipeline involving social celebrities, to be released in about three months, Prakash Kumar said.

Arumugam Kalimuthu, Senior Programme Support Manager, Plan India New Delhi dwelt on the three major benefits of ES-saving in precious water, recycling of human waste and availability of ideal models for problem areas. ES models were acceptable for drought as well as water-logged areas. People were coming to accept ES for its innate benefits, Kalimuthu said.

Sunil Menon and Junaid Ahmed of the Department of Drinking Water Supply distributed course certificates to the participants. L. Peter, treasurer proposed the vote of thanks.



THURSDAY, FEBRUARY 26, 2009

THE HINDU

"Use water in most sustainable manner"

Special Correspondent

TIRUCHI: To solve the twin problems of rapid deterioration in the quality of drinking water and alarmingly high rate of decline in the per capita availability, a holistic and integrated sustainable sanitation approach was advocated by representatives from 20 states at the national level training program on ecological sanitation here on Tuesday.

The programme was organised by Water Sanitation and Hygiene (WASH) Institute, Kodalkanal, with the support of central Department of Drinking Water Supply.

Ecosan was an integrated approach for solving the very many problems, associated with present sanitation systems which required a large quantity of water for successful functioning.

Further, the disposal of human waste under the existing systems led to serious contamination of both underground and surface water. With the country facing a gigantic task of providing a sustainable sanitation system, a new technology has to be adopted.

TWAD Board Superintending Engineer T. S. Sekar, presiding over the valediction, described the beneficial features of Ecosan technology which was most environment-friendly and helped increase food production.

Outlining the water scenario, he added that the pre-



ENVIRONMENT FRIENDLY: TWAD Board Superintending Engineer T. S. Sekar handing over a certificate to a participant at the valediction of the national training programme on ecological sanitation in Tiruchi on Tuesday.

cious water should be used in the most sustainable manner and all efforts taken to reduce the dependence of sanitation systems on water.

The Technical Adviser, Plan India, New Delhi, Arumugam Kalimuthu expressed deep interest shown by 120 delegates from 20 states in creating pilot models on the lines of Musiri ecological sanitation programme.

Already, over 400 ecosan toilets were functioning in and around Musiri and scientific research programmes in collaboration with national and international organisations have been initiated to use urine as liquid fertilizer for different crops.

Director, SCOPE, M. Subburaman, and Prakash Kumar of UNICEF, Delhi, emphasised the need for creating models without in any way compromising the special features of the ecosan technology.

Y. Ganapathy, liaison officer, Exnora International, spoke on ensuring quality during the construction of the new Ecosan toilets. K. Y. Babu, training coordinator, WASH Institute, trained the participants about construction of ecosan toilet.

The delegates visited Musiri for first hand knowledge of the working of ecosan toilets and decentralised waste water system and solid waste management.



Use water in the most sustainable manner: Expert

ENS
Tiruchy, February 24

A WORLD in which all the communities have access to safe, protected and sustainable drinking water and sanitation services, with improved hygiene practices was the motto stressed at the National Level Training on Ecological Sanitation for Communication and Capacity building Development Unit officials organised by Water, Sanitation and Hygiene Institute (WASH), Kodaikanal.

The objective was mooted to solve the twin problems of rapid deterioration in the quality of drinking water availability and alarmingly high rate of decline in per capita water availability. Consequently a holistic and integrated sustainable sanitation approach was advocated by representatives from 20 states at the National level Training programme, with the support of Department of Drinking Water Supply, Government of India, here today.

Ecosan was an integrated approach for solving a number of problems associated with present sanitation systems which required a large quantity of water for successful functioning. Further more, the disposal of human waste under the existing systems led to serious contamination of both underground and surface water. The need thus arises to provide a sustainable sanitation system for the 60 crore and more of the country's population, for which a new technology has to be adopted.

Superintending engineer T.S.Sekar who presided at the valediction of the pro-

gramme, dwelt on the beneficial features of Ecosan technology which was environment friendly and also assisted in increasing food production.

Precious water should be used in the most sustainable manner and efforts taken to reduce the dependence of sanitation systems on water, Sekar added.

Arumugam Kalimuthu, Technical Advisor, Plan India, New Delhi appreciated the enthusiasm evinced by the 120 delegates from 20 states across the country in cogging pilot models on the lines of Musiri ecological sanitation.

M.Subburaman, Director, SCOPE and Prakash Kumar of UNICEF stressed the need for creating models without any compromise on the special features of Ecosan technology. Prof C.A.Srinivasamurthy of University of Agricultural Sciences, Bangalore and Prof Abdul A.Rahaman of SRM University, Chennai, also spoke on the occasion.

K.Yabu, Training Coordinator, WASH Institute, imparted training to the participants on the construction of Ecosan toilets. The delegates were also taken on a visit to Musiri for a first hand knowledge of the functioning of Ecosan

The need arises to provide a sustainable sanitation system for the 60 crore and more of the population



தினமணி

வெள்ளிக்கிழமை
27 பிப்ரவரி, 2009
திருச்சி

முசிறி பகுதியில் குழல் மேம்பாட்டு கழிவுறைகள் ஆய்வு

முசிறி, பிப். 26: முசிறி குழல் மேம்பாட்டு காதார கழிவுறை களை சுற்று குழல் காதார முதன்மை ஆலோசகர் அன்மை மிஷி ஆய்வு செய்தார்.

முசிறி குழல் மேம்பாட்டு கழிவுறைகளை உள்ளிசெய் ஆலோசகர் பிரகாஷ்நாதர், தில்லி குடிநீர் மற்றும் சுற்று குழல் காதாரத்துக் கான முதன்மை ஆலோசகர் ஆறு முகம் காளிமுத்து ஆலியோர் முசிறி மலையப்பபுரத்தில் உள்ள குழல் மேம்பாட்டு கழிவுறைவை பார்வையிட்டு ஆய்வு செய்தனர்.

மனித கழிவுகள் உரமாக மாற்றப்படும் விதம் குறித்து கேட்டறிந்தனர். முசிறியில் தடைபெற்ற கனப்பார்வை திசுச்சிவில் மேகலயா, ஜார்கண்ட், மேற்கு வங்கம், தமிழக தலை தொட்டி மற்றும் திண்டி மேம்பாட்டு அதிகாரிகள் பிரிவு அதிகாரிகள் ஆய்வு செய்தனர்.

ஆய்வின்போது தமிழக குடிநீர் வடிகால் வாரிய இளநிலை பொறி பாளர் அரு.கப்பிரமணிபன், வான் இன்ஸ்பெக்டர் பதிந்தி ஒருங் கிளைப்பாளர் பத்தேரி பாயு, ஸ்கோப் நிஜுவன் ஒருங்கிணைப்பாளர் மதிமுகம் உள்ளிட்டோர் கலந்து கொண்டனர்.