

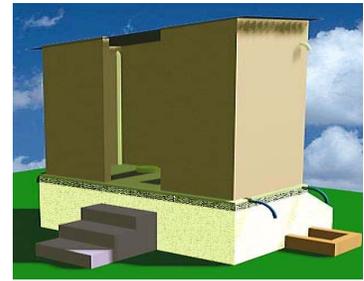


ECO-TOILET TECHNOLOGY (Evolved by BARD)

Background:

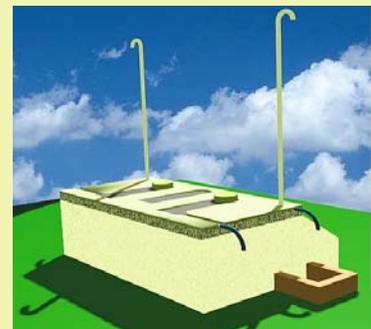
It is the rights of all mankind to access sanitation facilities, which is recognized development goal. Corresponding to this target, it is necessary to apply the improved technology for sanitation considering human excreta management to developing countries in an acceptable way.

In Bangladesh, although a type of toilet named **pit latrine** is now widely expanding. In Bangladesh, although a type of toilet named pit latrine is now widely expanding its coverage, this type of toilet had disadvantages in aspects of sustainable use, sanitation during flood and environmental impacts.



- Most people are obliged to build a new pit once it is full and the human excreta is buried with old pit, as they do not have a system of transporting the night soil or a place to bury it.
- When the flood level exceeds the land level, people are not able to use the latrine, and the excreta would flow out with high possibility.
- The lack of any treatment on the bottom of pits allows the black water to infiltrate contaminating underground water and surrounding ponds. Surface water quality is to be conserved as alternative drinking water sources, where tube wells are affected with arsenic contamination.

An appropriate human excreta management system is also necessary together with hygienic toilet in the conditions that there is not a system of transporting and a sanitary dumpsite. Followings are a proposal of hygienic matching for organic resource cycle.



- To separate urine, which is rich in nutrition and free from disease causing bacteria, and dangerous feces, which contains pathogenic microorganism.
- Urine should be sprayed on agricultural land after diluted by water as it has fertilizing effects.
- As for the feces, it is necessary to make it safe before applying into agricultural land. Drying during more the 6 months detention is considered as the method of making it safe.

The application of dried feces as organic resources contributes to improve soil conditions, which have been degraded by the application of chemical fertilizer for a long time.

In order to be accepted by the local society, the technologies to improve sanitation and managing human must correspond to local demands and it should be installed and managed by the local found, materials and human resources independently. The technologies with this concept are called “intermediate technology”, as it is neither primitive nor high technology.

The Bangladesh Academy for Rural Development (BARD) has already started the activity, in which toilets corresponding to above-mentioned problems have been constructed as demonstration facilities. BARD also has made users manual and formed a checking system by them users themselves. The ownership is formed among the users, as users repair the damages by themselves willingly. The toilets are used cleanly and reverse using against the manual is seldom observed .As a result, dried feces with good quality have been obtained, the water contents of which is low and look like soil, People not only the users, have shown deep concern with



improved sanitation and resources cycle of human excreta. As a result, the technology which BARD has installed in proved as acceptable technology for Bangladesh rural areas and villagers ask for more toilet construction and they have agreed to pay a portion of construct cost. This technology will contribute to improve sanitation and degraded soil condition, decrease environmental impacts on water and soil and make the life span of toilet long

Through the discussion on low cost design at the national workshop in February 2007 and training the labors in this country, it is considered that they can construct the toilets by themselves with selecting proper materials, to keep the construction cost low. BARD has concluded that it is possible to spread the technology and BARD is proposing this project as grass-root cooperative activity.

Through this project, if independent construction and management of socially accepted toilet technology is verified, the replication of this kind of project throughout the country will be realized. Sanitation improvement will decrease the risk of unexpected expense necessary for medical treatment or medicine and contribute to raise quality of life. This project, which will overcome the disadvantages of existing sanitation facilities, has necessity and appropriateness from the viewpoint of spreading sustainable sanitation in development country.



Objectives of the Project:

- To raise peoples awareness through hygiene and sanitation education
- Sanitation improvement and sanitary management of human excreta through the ecological sanitation considering resource cycle
- Construction and management of ecological sanitation independently
- Improvement of degraded soil condition through the human excreta application into natural cycle process

Expected outcomes:

- Construction of eco-san toilet and appropriate management of human excreta.
- Human excreta derived resource utilization.
- Health risk reeducation and improvement of living environment.

Lesson Learnt:

- The toilet owners are using human excreta (urine and feces) in their farm practices and they found positive results.
- Many people are interested to have the eco-toilets in their own homestead areas.
- Presently people are contributing 30-35% of the construction cost.
- Security of the rural women and girls has been ensured.
- Increased soil fertility and productivity
- Decreased health risks.
- Environmental protection.

Success Stories:

- Government of Bangladesh has installed 4498 Eco-toilets as demonstration (one in each Union) through Local Government Division.
- 100 Eco-toilets were constructed in six villages of Comilla through JICA fund.
- 20 Eco-toilets were constructed in Sabazpur Tea Estate of Moulivibazar for the workers.