



# ENVIS Newsletter



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## REDUCE FOOD WASTAGE



**WORLD ENVIRONMENT DAY**  
**5 JUNE**

**REDUCE • YOUR • FOODPRINT**



ENVIS Centre, Department of Environment, Government of Tamil Nadu  
Panagal Building, No.1, Jeenis Road, Saidapet, Chennai-600 015. Tel: 044 24331243  
Fax: 044 24336594 Email: [tn@envis.nic.in](mailto:tn@envis.nic.in) Website: [www.tnenvis.nic.in](http://www.tnenvis.nic.in)





## WORLD ENVIRONMENT DAY 5 JUNE

**REDUCE • YOUR • FOODPRINT**

The 2013 World Environment Day theme is Think. Eat. Save. According to the UN Food and Agriculture Organization (FAO), every year 1.3 billion tonnes of food is wasted or lost. This volume of waste is more than the total net production of Sub-Saharan Africa. At the same time, 1 in every 7 people in the world go to bed hungry and more than 20,000 children under the age of 5 die daily from hunger. Approximately 98% of the world's hungry live in developing nations.

Given this enormous imbalance in lifestyles and the resultant devastating effects on the environment, this year's theme – Think. Eat. Save – encourages you to reduce your foodprint. The idea is for you to become more aware of the environmental impact of the food choices you make and empower you to make informed decisions.

While the planet is struggling to provide us with enough resources to sustain its 7 billion people (growing to 9 billion by 2050), FAO estimates that a third of global food production is either wasted or lost. Food waste is an enormous drain on natural resources and a contributor to negative environmental impacts.

In fact, global food production uses 25% of all habitable land and is responsible for 70% of fresh water consumption, 80% of deforestation, and 30% of greenhouse gas emissions. It is the largest single driver of biodiversity loss and land-use change.

Making informed decision means, for example, that you purposefully select foods that have less of an environmental impact, such as organic foods that do not use chemicals in the production process. Choosing to buy locally can also mean that foods are not flown halfway across the world and therefore limit emissions.

Sustainable consumption is all about 'doing more and better with less,' through reducing resource use, degradation and pollution while increasing the quality of life for all. The massive consumption of both renewable and nonrenewable resources contributes to a massive loss of biodiversity – with current extinction rates of birds, mammals and amphibians estimated to be at least 100 times, but possibly over 1,000 times, higher than pre-industrial rates. The poorest population is most affected by such changes giving that they rely directly on natural resources — such as fishing, small-scale agriculture or forestry — for their livelihoods.

### **Food preservation**

Food preservation is an effective way of saving food and preventing it from being wasted or lost. In fact, communities around the world have been employing food saving methods for centuries in order to prolong its shelf life. There are many indigenous and traditional ways of preserving food which are practiced around the world and here are some interesting examples!

The Incas historically introduced the production of chuños to South America. It was a way to preserve potatoes by exposing a frost-resistant potato variety to the very low night temperatures of the Andean Altiplano, freezing them, and subsequently exposing them to the intense sunlight of the day.

Kiviak is a traditional wintertime Inuit food from Greenland that is made of auks (seabirds) preserved in the hollowed-out body of a seal and which are served at feasts or weddings. North American tribes were the first ones to eat pemmican, a mixture of dried meat and tallow. It was widely adopted as a high-energy food by Arctic and Antarctic explorers as it is a concentrated mixture of fat and protein.



In Brazil, indigenous groups use the fermentation and maturation of *yuca* (cassava) to develop their farinha, which then became a highly popular Brazilian staple food. Traditional communities also used to cook their prey and leave it immersed in fat for meat preservation.

In Nigeria and several other western African countries, cassava tubers are peeled, washed and grated to produce a mash. The mash is placed in a porous bag and allowed to ferment for a couple of days, while weights are placed on the bag to press the water out. It is then sieved and roasted, resulting in a dry granular foodstuff called garri, which can be stored for long periods. Bedouins and other desert populations produce ghee, a type of butter that has a long shelf-life and needs no refrigeration, prepared by boiling butter and removing the residue.

Bakkwa, a Chinese salty-sweet dried meat, was traditionally made with the leftover meats from

festivals and banquets. The meat from these celebrations is trimmed of the fat, sliced, marinated and then smoked.

The Turkish horsemen of Central Asia used to preserve meat by placing slabs of it in pockets on the sides of their saddles, where it would be pressed by their legs as they rode. This pressed meat was the forerunner of today's pastirma, a term which literally means 'being pressed' in Turkish, and is the origin of the Italian pastrami.

Cheese is an ancient food whose origin, predating recorded history, is assumed to lie in the practice of transporting milk in bladders made of ruminants' stomachs, with their inherent supply of rennet.

Mongol Empire troops used to condense or shrink the meat of a whole cow down to the size of a human fist—this explains why their armies could travel huge distances seemingly without supplies. Tiny amounts of the concentrated beef protein (known as "borts") could be sliced off into hot water to make a highly nutritious soup. This is just one of the traditional ways in which nomads and herders in Mongolia have preserved food without refrigeration for centuries.

The Kenyan Turkana people preserved milk by turning it into milk powder which is done by sun drying the clotted fermented milk on flat rocks or hides. In Central Kenya, the Kikuyus used to preserve meat by roasting it, and then generously applying natural honey on top of the roasted meat. This delicacy was called "rukuri". The Kikuyus could feast on it for many days.

Traditionally, the Kikuyus protect cereals (while growing in the garden and after it is harvested) by mixing the ash from the fireplace with water and sprinkle on the maize, which prevented insects from destroying the maize. This technique is also used for long storage of cereals, by mixing the cereals (maize and beans) with ash. This way, the cereals can remain for many months without being feasted on by weevils.

## Traditional food grain storage methods in Tamil Nadu

Proper storage of food grains is necessary to prevent spoilage and increase keeping quality. The practice of using natural sources for storage of various household items dated back to the very earliest periods of known history. A description of the indigenous technologies being followed by farmers Tamil Nadu for storing grains and seeds are given below:

### Red gram storage with common salt

Farmers use common salt in red gram (*Cajanus cajan*) grains storage. In this practice, about 200 gm of salt is mixed for a kg of red gram grains manually. These treated grains are then stored in jute gunny bags and the bags are stitched. Due to salt, insects are kept away from the stored grains.

### Ash seed treatment in sorghum

Ash is mixed with the sorghum (*Sorghum bicolor*) seeds at the ratio of 1:4. After the ash treatment, sorghum seeds are tied in the jute gunny bags. Farmers believe that ash application controlled losses due to insect attack up to an extent of 80%.

### Ragi storage with neem leaves

From time immemorial farmers have been aware of the insecticidal properties of neem. Farmers use neem (*Azadirachta indica*) leaves in the storage of ragi. The strong odour of these leaves keep the storage pests like lesser grain borers (*Rhyzopertha dominica*), saw toothed beetle (*Oryzaephilus surinamensis*) and flat grain beetle (*Cryptolestes minutus*) away. Being very cheap and simple most of the farmer follow this technology to get rid of storage pest.

### Use of Pungam leaves in paddy storage

In this age old practice, fresh pungam (*Pongamia glabra*) leaves are placed as layers in between the gunny bags arranged one above other in storerooms. These leaves act as a repellent

against grain moth (*Sitotroga cerealella*) and rice weevils (*Sitophilus oryzae*).

### Storage of seeds with lime

Farmers traditionally follow a practice of storing pulse grains along with lime powder. In this practice, farmers dust about 10 gm of lime per kg of grains. After thorough mixing they store them in jute gunny bags.

## Traditional food grain storage structures in Tamil Nadu

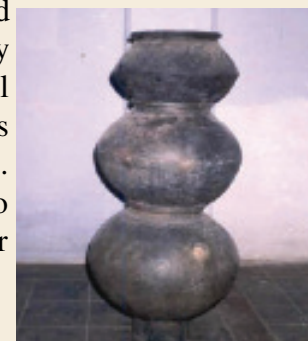
### Kulumai

Kulumai is an indoor storage structure which protects the grains from pests and even from rats and rodents. It is a poultice crafted from tank silt, rice bran and paddy straw. The poultice is moulded by hands to form ring like structures. After moulding, the rings are charred in a brick kiln for two days or sun dried for 4-5 days. Then the dried rings are smeared with cow dung solution and lime washed. The rings are then arranged one over another to make a kulumai. Paddy grains stored in the structure will have a keeping quality for about 3 years.



### Modappanai

This is simply a mud pot, but bigger in size. Modappanai is fabricated with clay soil by using a specialized wheel. Then the wet clay pot is charred in the brick kiln for its hardening. The storage capacity of each modappanai varies from 25-30 kg. Both kulumai and modappanai are usually manufactured by local artisans called kuyavas having specialized skills. Modappanais are also arranged one over another at a corner of a room.





## **Kaambara**

Kaambara, locally called as Kalangiyam is a permanent masonry structure built on a corner or on one side of a room. This is built with bricks pasted with a mixture of diluted lime and sand called, lime mortar. Kaambara may have a dimension of 3x2x2 m or more. Kaambara is given lime washing once in 2-3 yrs. It is used for storing large quantity (about 2-3 metric tonnes) of food grains, with a facility to fill in or drain out the grains at any time. Before filling the grains, the inner walls of the Kaambara are lined with palmyra leaf mats to provide a moisture proof environment. Small wooden stands are given on one side of the inner wall to place castor oil lamps for lighting, while working inside the structure.

## **Zero energy cool chambers**

A zero energy cool chamber is a double brick walled structure used to preserve fruits and vegetables. The gap between the two brick walls is

filled with river or lake sand. The sand is saturated with water. Water must be poured over the sand to ensure that it remains moist. As the water evaporates, it removes the heat from within the chamber through the process of evaporative cooling.

## **Pot-in-Pot Coolers**

Similar to the cool chamber, the pot-in-pot relies on evaporative cooling to keep fruits and vegetables fresh for longer periods of time. Instead of a double brick walled structure though, two earthenware pots are used; one needs to be able to fit within the other. Again, the gap between the two is filled with river or lake bed sand and must remain moist.



## **Food security – an outlook of a Rajah**

It is now widely accepted that chronic hunger today is due more to the lack of purchasing power than to the non-availability of food in the market. In other words, to win the battle against hunger, we have to fight the “famine” of jobs. Between 50 to 80 percent of the population in developing countries depend on agriculture for their livelihood. Although the contribution of agriculture to GDP is going down in many developing countries as a result of the diversification of the economy, the burden of providing jobs still lies largely with the farm sector.

A high rate of agricultural growth is a precondition of faster employment growth. In any employment strategy, anywhere between two-thirds to three-quarters of the desired employment growth would come from achievement of higher agricultural output levels. Thus, widespread agricultural growth was a great equalizer in terms of employment generation and poverty reduction in India.

Diminution of the biological potential of soils, loss of biological wealth, deforestation, depletion of ground water resources, pollution, and the growing imbalance between carbon emissions and carbon absorption are leading to a situation where safeguarding the ecological base of agriculture may become the most important food security challenge. It is clear that economic entitlements and ecological obligations must go together for achieving sustainable food and nutrition security.



Written by  
T.N.S. Murugadoss Theerthapathy,  
Rajah of Singampatti

## EVENTS

### Walkathon to commemorate World Environment Day 2013

On 8<sup>th</sup> June 2013, a Walkathon Rally – themed “Reduce your food print” was conducted by Indian Development Foundation and Standard Chartered Bank in collaboration with the Department of Environment, Government of Tamil Nadu. The Walkathon was held at Marina Beach to create awareness and propagate the message of the World Environment Day theme. The Walkathon started from the lighthouse at 7.00 A.M and ended at the labour statue. Dr. H. Malleshappa, I.F.S., Director, Department of Environment addressed the gathering and highlighted the importance of food security. He later flagged off the rally. ENVIS Centre of the Department of Environment also took part in this rally and spread awareness. Around 500 people participated in the rally.



### World Environment Day 2013 Celebrations at Government Dental College, Chennai

The Enviro-club of the Government Dental College, Chennai conducted a seminar on 29<sup>th</sup> June 2013 to create awareness on the World Environment Day and the theme “Think.Eat.Save”. Thiru Mohan Verghese Chunkath, I.A.S., Additional Chief Secretary, Environment and Forest Department presided over the programme and delivered the keynote address. In his speech he encouraged the students to be passionate about their interests, which will help them to excel in their endeavors. Dr. H. Malleshappa, I.F.S., Director, Department of Environment and the staff of the ENVIS Centre of the Department of Environment also took part in programme.



### Snippets of other events

- Dr. H. Malleshappa, I.F.S., Director of Environment, participated in the Nodal officers training on ecosystem based adaptation organized by GIZ at Kolkatta on 11<sup>th</sup> – 13<sup>th</sup> April 2013.
- Dr. H. Malleshappa, I.F.S., Director of Environment, participated in the Technical Meeting and Training on “Monitoring and Evaluation in Climate Change Adaptation” at Mexico on April 29<sup>th</sup> to 3<sup>rd</sup> May 2013.
- Dr.H. Malleshappa, I.F.S., Director of Environment, participated in the International Workshop on “Inventory of Methods for Adaptation to Climate Change (IMACC)” in Bonn, Germany on 15<sup>th</sup> – 17<sup>th</sup> June 2013.

### World Environment Day Celebration 2013

The Department of Environment, in collaboration with the Tamil Nadu Pollution Control Board celebrated the World Environment Day on the 5<sup>th</sup> June 2013. The programme was held at the auditorium of the Tamil Nadu Pollution Control Board. The programme started with the lighting of the lamp. Dr. H. Malleshappa, I.F.S., Director, Department of Environment welcomed the gathering. Thiru V. Thangavelu, I.A.S., Retd., Chairman, State Environmental Impact Assessment Authority and

Dr. D. Karthikeyan delivered a special address. Thiru Mohan Verghese Chunkath, I.A.S., Additional Chief Secretary, Environment and Forest Department delivered the presidential address and the Hon'ble Minister for Environment, Thiru M.C. Sampath, delivered the keynote address. The annual Environmental Awards for the year 2012 were also distributed by the Hon'ble Minister for Environment. The following are the winners of the annual Environmental Awards for the year 2012.



#### Environmental Awareness and Education Awards

Sevalaya, Thiruvallur District	Aringnar Anna Virudhu	First Prize
Thiru. V. Tamilarasu, Kancheepuram District	Sutru Suzhal Sudaroli Virudhu	Second Prize
Thiru. S. Gunasekar, Dindigul District	Sutrusuzhal Seyal Veerar Virudhu	Third Prize

#### Environmental Protection and Environmental Management Awards (Organisation)

Suganthi Devdasan Marine Research Institute, Tuticorin District	Dr. Gurusamy Mudaliyar Virudhu	First Prize
Tm t. Mangalam Balasubramaniam, Exnora Green, Pammal	Sutru Suzhal Kavalari Virudhu	Second Prize
Madras Christian College, Kancheepuram District	Sutru Suzhal Seyal Veerar Virudhu	Third Prize

#### Environmental Protection and Environmental Management Awards (Individual)

Thiru. M. Jagajoythi, Tuticorin District	Karma Veerar Kamarajar Virudhu	First Prize
Tm t. Radha Balasubramaniam, Chennai District	Sutru Suzhal Puravalar Virudhu	Second Prize
Thiru. M. Kannan, Nilgiris District	Sutrusuzhal Seyal Veerar Virudhu	Third Prize

#### Best Research Paper on Environmental Issues

Dr. G. Vengatesan,  
Tiruchirapalli District





## Cash award incentive for reducing plastic use

The Government of Tamil Nadu announced an incentive programme with cash awards for active participation in reducing the use of plastic by schools/villages/self help groups and keeping the environment free from plastic. These cash awards were also distributed by the Hon'ble Minister for Environment, Thiru M.C. Sampath, during the World Environment Day celebrations held on 5th June 2013 at Tamil Nadu Pollution Control Board, Chennai. The following are the winners.

Best Three Plastic Free Villages		
Paraliyar Uratchi Nilgiris District	First Prize	Rs. 5,00,000/-
Devicode Uratchi Kanniyakumari District	Second Prize	Rs. 3,00,000/-
Periyapattu Uratchi Cuddalore District	Third Prize	Rs. 2,00,000/-
Best Three Self Help Groups		
Panchampatti Self Help Group Dindigul District	First Prize	Rs. 5,00,000/-
Panimalar Mahalir Self Help Group Saravanampatti, Coimbatore District	Second Prize	Rs. 3,00,000/-
Sudesi Mahalir Self Help Group Madurai District	Third Prize	Rs. 2,00,000/-
Best Three Plastic Free Clean and Green Schools		
Florence Swainson School for the Deaf Tirunelveli	First Prize	Rs. 5,00,000/-
Government High School Machampattu, Vellore District	Second Prize	Rs. 3,00,000/-
Government High School Tiruvannamalai District	Third Prize	Rs. 2,00,000/-



### ENVIS Team

**Dr. H. Malleshappa, I.F.S.,**  
Director

**Dr. Jayanthi M., I.F.S.,**  
Additional Director

**Dr. J.D. Marcus Knight**  
Senior Programme Officer

**Mr. K. Muthukumar**  
Programme Officer

**Ms. S. Indra Devi**  
Programme Assistant

**Ms. M. Shanthi**  
Data Entry Operator

**Editorial Board:** Editor-in-chief: Dr. H. Malleshappa, I.F.S., Editor: Dr. Jayanthi M., I.F.S., Associate Editor and Design: Dr. J.D. Marcus Knight, Printed at R.R. Screens, Chennai-14

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