Global Journal of human social science
Geography & Environmental GeoSciences
Volume 12 Issue 10 Version 1.0 Year 2012
Type: Double Blind Peer Reviewed International Research Journal
Publisher: Global Journals Inc. (USA)
Online ISSN: 2249-460X & Print ISSN: 0975-587X

Chongming Island Ecological Conservation Project

By Raanan Katzir

Abstract - Chongming Island Is under the framework of Shanghai administration. It is an alluvial Island in the mouth ol the Yangtze River. The area is 1041 km2 and the population is about 700,000 inhabitance. An expected tunnel will combine the island to the main land in the future. The local population will increase and the island is becoming very attractive to tourists. The island could be regarded as a Peri Urban system of Shanghai neighborhood. All these turn Chongming Island into an ecological conservation project directed by Shanghai Academy Agricultural Science (SAAS) organization. The following are few ideas that can reduce the hazard of soil, water, air contamination and other environmental distur-bances. Also activities proposed to change the island agricultural features, ecological education campaign and eco-agro tourism projects.

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GJHSS-B Classification : *FOR Code: 149902*

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I. Ecological Conservation Activities Recycling City Garbage into Compost

City garbage derives from homes contains a very high percentage of organic material that can be turned after fermentation procedure into valuable compost, which could be used as organic fertilizers.

The garbage if not treated can become a resource of soil, water and air pollutant. The compost produced of the garbage is a main natural fertilizer for organic agricultural production. The near by Shanghai city is a high potential market for organic products (Katzir, 1993, 1996a, 1996b, 1999).

II. Recycling Sewage Water

Origin sewage water from people homes has about 400 BOD (Biological Oxygen Demand). This water could be intensively recycled through oxygenized ponds into water with lower BOD as 30 - 40. Such water could be used as irrigation water for agriculture and public gardens. This water could be also be used for the ecological rehabilitation of rivers, lakes and cultivation fish in ponds. Recycling sewage water is an essential ecological urban solution and at the same lime a solution for agricultural and environmental purposes (Katzir, 1999, 2000).

III. Recycling Oils

Oils residues could be a serious nuisance for nature. It is important to prevent organic and synthetic oils from reaching the site of sewage water recycling plants.

Organic oils collected from restaurants to be used as a component of the biodiesel production. Synthetic oils could be also collected Iron garages and later treated through biological means as bacteria and micro planktons to be decomposed. The above mentioned procedures are generating jobs and important to ease on the environment pollution (Katzir, 2006)

IV. Plant Residues

Various plant residues from agriculture, gardens and Industry could be used as components in the above mentioned compost production.

By recycling these residues we turn organic waste into productive compost production and avoiding environmental pollution. Using industrial organic waste will Improve also the profitability of the industry (Katzir, 2000).

V. Animal Husbandry Urine and Manure

Animal husbandry waste is a high risk to environment. Animal urine could be collected and use as organic fertilizers in organic agriculture. Animal urine and manure could be used for compost preparation and bio gas production as methane gas to be used at home as an energy resource. The sludge remains after mixing with straw and peat could be used as a media to mushroom production. The sludge still rich with organic compounds is an adequate resource lor producing champignon mushroom (or the near by big market of Shanghai. Introducing this sophisticated agricultural branch will generate occupation and income (Katzir, 2003)

VI. Chicken Manure to Feed Cattle and Fish

Chicken manure accumulate in big amount is an ecological disturbance. Chicken manure treated through paste- rizing and cleaning by magnet to get out metals residues could be used to feed cattle and fish.

The chicken industry is common on the island since the near by Shanghai market is a big consumer of chicken meat and eggs.

Cattle could be deeded with chicken manure up to 70% of the daily portion. Feeding with chicken manure will save land used regularly for forage production (Katzir. 1999)

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VII. Planting Mangroves to Protect Shores and Rivers Banks

Sea shores and river banks could be very vulnerable to erosion and other destructions occur. Planting mangroves trees on the water edges of sea, lakes and river banks protect and avoid destruction. Mangroves are also favoring the reproduction of fishery. Mangroves are essential for fish laying eggs and fish fingerlings production. In case of Tsunami storm, mangroves trees serve as a very efficient protection wall (Katzir. 2002).

VIII. Harvesting of Rain Water from Urban Areas, and Rural Drainage System

Rain water could be collected through the urban city drainage system and could be added to the ponds where the sewage water is being recycled. This will improve the Biological Oxygen Demand (BOD) and the recycled water produced will be on higher quality. Also drained water from agricultural fields could be added to the same system (Katzir, 2003)

IX. Ecological Ponds of Fish Production

The Integrated Aquaculture Farming (IAF) clearly state that to maintain fish ponds under reduces pollution is more ecological. The principles is stocking the ponds with various fish specious that live in the different pond's levels (up, medium and bottom), and mutually consume the excretion of the neighbor specious.

As a result the ponds will be kept cleaner from organic waste, bad odors and also free ol mosquitoes. Such a system does not bother the near by urban dwellers. As mentioned, il Is possible to feed the fish In the pond with chicken manure (Katzir. 1999)

X. Changing the Agricultural Features

Introducing changes in the local agricultural features could reduce the ecological disturbances and improve environmental conditions (Katzir, 1992, 1994, 1999a, 1999b, 2000, 2001). The following changes are recommended:

- Organic agriculture to reduce the use of pesticides and fertilizers (Katzir, 2002).
- Integrated Pest Management (IPM), to reduce the use of pesticides,
- Biological Control by using beneficial Insects to reduce the use of pesticides.
- Producing and using compost as organic fertilizers to reduce the use of synthetic fertilizers
- To encourage the use of recycled sewage water for irrigation (Katzir. 2004).
- Maintain efficient field drainage system to avoid high under ground water level.
- Promoting nurseries to propagate fruit trees and other trees.
- Encouraging trees planting for soil conservation and improving natural sight conditions.
- Planting wind breakers to reduce damage of storms.
- Planting fruit trees.
- Promoting flowers and pot plants production.
- Agricultural demonstration and educational farms for urban visitors.

All these mentioned systems will turn the local agriculture into a high sustainable agriculture which conserve better the natural resources and cope better with the near by urban sector (Katzir, 2005)

XI. Ecological Education to Farmers, City Dwellers, Industry, Commerce and Youth

An educational campaign should be plan and launch to increase the conscience of farmers, city dwellers. Industry. commerce and youth to ttie environmental issues. Such campaign will also increase the engagement of all society forms to improve the ecological level of Chongming Island (Katzir, 1995, 2001, 2006).

XII. Eco and Agro Tourism Projects

Agro and eco-tourism can become a major income to the island. The following activities should be encouraged:

Promoting attractive tourist activities as boat surfing, swimming pools, tennis courts, sport clubs, aquarium, fishing and others.

- Avoiding oars from entering the island from the main land to reduce noises, air contamination and traffic jams.
- Attractive hotels and resort villages.
- Gardens and parks.
- Entertainment centers
- Museums
- Natural reserve site open to public

Agro and eco-tourism are regarded at present as very attractive lo urban dwellers. Chongming Island can become an out standing model for such activities for the mutual benefit of the near by urban population and the local rural agriculture producers (Katzir, 2003).

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