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RESEARCH ARTICLE

HOME ECOSYSTEM DEVELOPMENT AND CONSERVATION FOR LIFE ON EARTH: NEED FOR FORMULATION OF A LAW GOVERNING MAINTENANCE OF HOME ECOSYSTEM FOR LIFE TO CONTINUE ON EARTH

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ABSTRACT

Nowadays the ecosystem is deteriorating thereby creating a lot of difficulties for the survival of life on earth. The scarcity of food and drinking water are the main problems. The Monsoon rain is wasted in the drains and river thereby reaching vast water bodies like lakes and oceans which are very far for reach by the inhabitants. Moreover our home ecosystem designed by our forefathers is spoilt nowadays by the descendants in dividing the land amongst the descendants. Our forefathers used to conserve the monsoon rain in a pond. In addition the home ecosystem included a garden, a kitchen garden, fruit plants, cowshed and a coop. Like this our forefathers need not worry about the imports from outside the state. And also there were no bandhs, blockades and general strikes in that time and the different tribes in Manipur lived so peacefully and prosperously. But nowadays almost half of the days of a year are suffering from bandhs, blockades and general strikes. And due to overpopulation, we depend everyday on the imported foods and goods from outside the state. The people creating the bandhs, blockades and general strikes are also suffering with the other groups of the society. Above all the most affected group are the labour class families. Here a model for development and conservation of a home ecosystem and a model of law governing the home ecosystem are designed and presented.

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INTRODUCTION

The world's climate is changing, and it will continue to change throughout the 21st century and beyond. Rising temperatures, new precipitation patterns, and other changes are already affecting many aspects of human society and the natural world. Climate change is transforming ecosystems on an extraordinary scale, at an extraordinary pace. As each species responds to its changing environment, its interactions with the physical world and the organisms around it change too. This triggers a cascade of impacts throughout the entire ecosystem. These impacts can include expansion of species into new areas, intermingling of formerly nonoverlapping species, and even climate change is happening on a global scale, but the ecological impacts are often local and vary from place to place. Human actions have been a primary cause of the climate changes observed today. (Ecological impacts of climate change, 2008, Committee on ecological impacts of climate change and the book was developed by Anne Frances Johnson).

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Objectives

1. Enhance understanding of the basic requirements for survival.
2. To enhance the knowledge of global warming and local actions to slow down its process.

Humans will be extinct in 100 years says eminent scientist (June 23, 2010 by Lin Edwards, Environment, June 23, 2010). Eminent Australian scientist Professor Frank Fenner, who helped to wipe out smallpox, predicts humans will probably be extinct within 100 years, because of overpopulation, environmental destruction and climate change. Fenner, who is emeritus professor of microbiology at the Australian National University (ANU) in Canberra, said homo sapiens will not be able to survive the population explosion and "unbridled consumption," and will become extinct, perhaps within a century, along with many other species. United Nations official figures from last year estimate the human population is 6.8 billion, and is predicted to pass seven billion next year. Fenner said that climate change is only at its beginning, but is likely to be the cause of our extinction. "We'll undergo the same fate as the people on Easter Island," he said. More people mean fewer resources, and Fenner predicts "there will be a lot more wars over food."

Easter Island is famous for its massive stone statues. Polynesian people settled there, in what was then a pristine tropical island, around the middle of the first millennium AD (Lin Edwards, 2010). The population grew slowly at first and then exploded. As the population grew the forests were wiped out and all the tree animals became extinct, both with devastating consequences. After about 1600 the civilization began to collapse, and had virtually disappeared by the mid-19th century. Evolutionary biologist Jared Diamond said the parallels between what happened on Easter Island and what is occurring today on the planet as a whole are "chillingly obvious." According to World Population Clock, by 2017, it will reach 7.5 billion. For all these reasons it is the hard time for we the human beings to develop our own home ecosystems and conserve our natural environment to lower the rate of our extinction at our best level.

Necessity to develop home ecosystem

In our childhood days in the 1960s, every home ecosystem had its own livelihood as well as income generating means. It included vegetables and pulses farming, orchards of fruit plants, poultry farming, fish culture, cattle farming and piggery and a loom for weaving the necessary cloths. These were the only means for our forefather's livelihood and income generation. Everyone lived in peace. But nowadays we are almost at the stage of population explosion leading to extinction from our mother earth. In the present day home ecosystems, only buildings of variable numbers of storeys are found. All the livelihood and income generating parts are converted into buildings to divide the land amoungst the descendants. As a result in the city every house has to buy water (for drinking and other purposes), vegetables, fruits and everything from the market. A time will come, may be earlier or later when there will be less products compared to the increasing population and will not be able to give the demands of the population explosion as in the case of Easter Island.

Here a sample of development of Home ecosystem is presented:

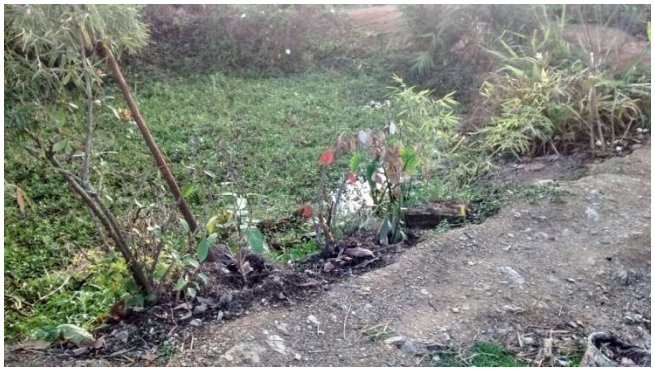
1.The homestead land before preparation. A marshy area

2.Preparation of the low lying ground as underground rain water harvesting tanks

3.Preparation of the bed of the underground tank

4.Upcoming wall of rain water harvesting tank

5.Two 15 ft by 14 ft tanks finished for terrace rain water harvesting



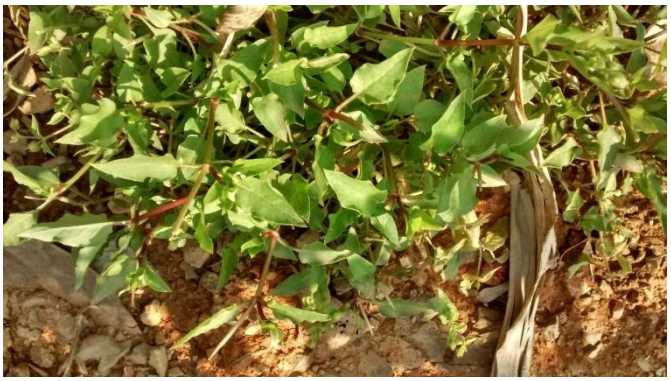
6.A pond is being made by the sides of which traditional medicinal plants like Nongmangkha Asinba, Phlogacanthus jenkinsii C. B. Clarke used in treating jaundice, Nongmangkha Angangba, *Phlogacanthus thyrsiflorus* Nees used as antibiotic and also as a dish and Takhetlei angouba are being planted. The new roots of takhetlei angouba are used in Iromba just like pullei.

7.On another side of the pond Banana plant, Nungsang mana plant for treatment of piles and broom plants and Yachubi (a traditional colouring plant for teeth used by old people) plant are being planted.

Some of the plants collected and planted having medicinal and kitchen value:

1.Mukthrubi, Zanthoxylum acanthopodium DC. It is used as an antibiotic in sour throat, as B Complex in mouth sores (chin lei chathatpa) and also as a special composition in edible snail dish.

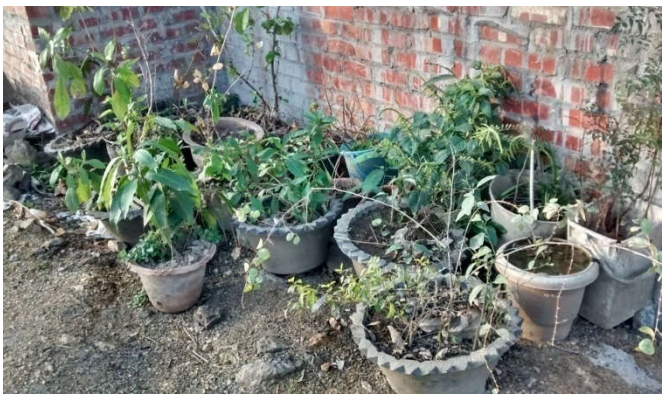
2.Ram tulasi, *Ocimum gratissimum* and common tulasi, Ocimum sanctum used as antibiotic and in green tea.



3.Yerum keirum, *Stellaria media* (Linn.) Vill. Crushed leaf or paste is useful to apply on boils. Leaf juice is applied in nasal bleeding. Fresh plant decoction is used for local application on fresh wounds.

4.Mayangton, *Ocimum americanum* is used predominantly in Bora, Iromba and pumpkin sabji.

5.A wild plant, Anjou in Kuki language. They make it to cook simple (Champhut) and it is a normal dish from their forefather's time.



8.Nurseries of fruit plants waiting for plantation.

There are many more plants to be collected and conserved.

This is the only beginning.

Again there is a problem for the waste of the kitchen in each and every house. We can convert the organic wastes of the kitchen into fertile soil in very simple way as

1.The fresh organic wastes of the kitchen are dumped on a part of the kitchen garden.

2.The organic wastes are then covered with a thin layer of soil and sprinkled with water every day. After about one to three months it is turned into loam soil which is very fertile for kitchen garden.

DISCUSSION

Warmer temperatures not only cause glaciers and land ice to melt (adding more volume to oceans) but also cause seawater to expand in volume as it warms. The global average sea level rose by just under .07 inches per year during the 20th century, but that number has risen to .12 inches per year since the early 1990s. Under a "business-as-usual" greenhouse gas emissions scenario, models indicate that sea levels could rise 2 feet or more by 2100 compared to 1990 levels (collections.plos.org/ eco-climate-change). Whereas in the cities we have to buy water for drinking and other purposes. So by developing terrace water harvesting underground tanks and pond for collecting the ground surface monsoon rain water we can at least fulfil the water demands of our family. Water harvesting is the collection of runoff for productive purposes. Instead of runoff being left to cause erosion, it is harvested and utilized. In the semi-arid drought-prone areas where it is already practised, water harvesting is a directly productive form of soil and water conservation (Wikipedia, the free encyclopedia). Western states, including Utah, Washington and Colorado, have long outlawed individuals from collecting rainwater on their own properties because, according to officials, that rain belongs to someone else (Mike Adams, the Health Ranger, 2010). This is actually the beginning of war for water. But any form of government in any country will not be able to supply water for all the inhabitants in the country when the population burst out as in the case of Easter Island. As the cultivable area is decreasing day by day because of increasing population, we cannot depend only on the market for our fruits and vegetables. We have to develop and conserve our own kitchen gardens and orchards for seasonal fruits and vegetables. When the population is exploded like that of Easter Island nothing will be found in the market. The people will quarrel each other for food. So it is very much needed to form a law for the home ecosystem by us. We cannot blame the government only for the shortage of foods and water. If we wait for the government we have to die of hunger.

Conclusion

So let us establish a friendly home ecosystem for our survival consisting of

1. Seasonal fruit plants for Oxygen supply and fruits to the family.
2. At least a pond for harvesting the ground rain water when the monsoon comes.
3. At least one or two underground tank for terrace water harvesting.
4. A kitchen garden for seasonal vegetables and pulses.
5. At least a coop for poultry farming for supply of animal proteins for the family.
6. If possible piggery and cattle rearing also can be done.

By doing so at least our dependence on the imports will decrease and the rate of struggle for food amongst the people will be decreased.

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My experience for the changing environment for the last fifty years from my childhood.

Wikipedia, the free encyclopaedia.

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