Shaping and Integrating Modern Technology - Development of

Sustainable Cities (Hydroponic Costal Colonies) and Meeting Future Global Needs for Food Production

Resources were all the time available but their utilization was always difficult due to lack of knowledge and technology. In ancient civilizations, limited technologies allowed only all agriculture developments to appear near rivers and fertile agriculture lands only. Humans were hindered to expand horizontally in agriculture, i.e. into new land areas, and to develop and integrate new activities due to lack of technological knowledge. On the other hand, the agricultural yields and crops were fulfilling food requirements of the citizens due to relatively small populations and there was good margin, as well, to feed citizens involved in non-agriculture activities, i.e. other sectors.

However, now due to increase of population specially in developing countries the gap is still widening between production and needs; as per world food program “***842 million people****in the world do not have enough to eat. This number has fallen by 17 percent since 1990*” Additional facts at <http://www.wfp.org/hunger/stats>. Furthermore, 25% of the cost of food aid was spent on transportation.

In addition to current efforts to minimize the human suffering from the shortage in food, resources should be utilized more effectively through adaptation, combination and integration of modern knowledge and technical breakthroughs such as:

1. Renewable energy especially solar energy for sea-water desalination, electricity production and household needs.
2. Cooling systems based on thermoelectric cells and natural ventilation solutions, e.g. Alhambra natural ventilation.
3. Smart building materials, including “compressed earth blocks” with better heat isolation design for energy-saving
4. Modern agriculture “hydroponic” with enhanced nutrient contents where agriculture lands are minimized or even not required, i.e. saving up to 90% of irrigation water.
5. Controlled climate in green-houses with optimization of growing conditions and automated ICT-based solutions.
6. Conservation of water-energy “WE” resources including waste-water treatment using intelligent matrices.
7. Development of clean and sterilized organic-fertilizers for enhanced land fertility and rehabilitation of damaged soils

With integration of relevant points (1-7) of the above given list to one set there would be new possibilities to encourage colonization of coastal areas to build sustainable agriculture colonies that can be the core of cities in the near future.

Unfortunately, the history does not tell the names and stories of individuals who were the pioneers behind the colonization and initiations of previous agriculture civilizations. However, modern history will write the names/inventions of “hydroponic costal colonies” that are emerging by the pioneers of the 21st century.

Yes it is the time to break our routine life style “Business As Usual” and adopt pioneered sustainable life solutions which in fact less luxury even though there is place for luxury tourism to visit and enjoy these colonies as well as to witness the natural development and expansion of human gathering! Sustainable life involves preservation of natural resources where industrial waste is turned to eco-products <http://cementkilnbypassdust.com/>

It is also possible to integrate these technologies in a ship and send it where-ever there is hunger “mobile hydroponic farm” to reduce the shipping costs, i.e. sea-based colonies.

Once this approach is adopted and financial resources secured the face Africa and Middle East (MENA) will change forever!

By Chemist/ Safwan Elfar