



## C-Green Solutions – Carbon Cycling – project summary

### *Nutrition, climate, energy – especially for the young*

*Poor nutrition, climate change and the energy crisis could all be resolved using a plentiful, free resource – seawater – with the help of the earliest plant life forms on Earth.*

### **Immediate term – Local Nutritional and Social Benefits**

Over the years, rainwater and over-cultivation have steadily leached the minerals from our soil into the sea. Conventional fertilizers only replenish eight or so of the 92 elements we need in order to process vitamins essential for health. Even the organic vegetables we grow and the cattle which feed off these are therefore lacking in nutrients. Virtually every modern disease can be traced to a mineral deficiency. For example, Dr Maynard Murray (see *Sea Energy Agriculture*, ISBN 0-911311-70-X) experimented with treating soil with sea nutrients. The results were impressive. Crops matured quickly, were resistant to pests and tasted better. Animals fed on the crops were immune to cancer.

Crops can be grown suspended in nutrient-rich water, rather than soil, using a technique called hydroponics. The plants do not need to put down roots to reach nutrients or anchor themselves, so all the growth is immediately upwards and outwards, giving high-yield, high-nutrient crops. The students of St Michael's plan to grow nutritious vegetables in this way. Following on from a community workshop, the youth decided to involve as many as possible disadvantaged children in the project, giving them a positive focus in the community, and to donate some of the produce to the local needy.

The project as a whole will occur in three main steps:

1. Hydroponic cultivation of vegetables, using conventional (organic) nutrients
2. Hydroponic cultivation of vegetables, using sea nutrients
3. Hydroponic cultivation of microalgae on land, using sea nutrients, establishing a route to scaling up, and attacking many of today's global issues.

### **Longer term – Attacking climate change, the energy crisis & world starvation**

The mainstream today seems to consider only two scenarios in connection with climate change and all the problems associated with the rapid depletion of the world's resources. (a) We can ignore the problems and continue along an unsustainable path. (b) We can minimise emissions, possibly encouraged through taxation - i.e. proceed more slowly towards the Day of Disaster by living a costlier, more austere life in the meantime. However, there is an option which, astonishingly, no one seems to consider. This is: (c) Reversing climate change by re-capturing atmospheric carbon and recycling it in the form of the world resources that we need.

Harry Hart and his associates at Global Eco spent over 30 years in the field researching a solution to arguably the most pressing global problems. They have identified a rapid, self-sustaining process which uses a combination of solar energy concentrators, sea water and microalgae, and produces a biomass that can multiply up to an absolute maximum of 40 times in a day, or 160 billion times in a week. This can very quickly re-capture vast quantities of atmospheric carbon (greenhouse gases) to be used, for example, to produce renewable fuel or nutrient-rich fertiliser for the world wastelands replanted and irrigated – with water, pumped and desalinated using energy generated by the process. As a by-product, deserts (i.e. 75% of the world's land) can be reforested, reclaimed for agriculture and human/wildlife habitation, potentially defusing many of today's territorial conflicts and countering the growing biodiversity crisis. Hardwood trees stimulate rainfall, and will bring the rains back to the deserts we left behind when we first cut down the forests to graze our cattle, leaving a trail of desert behind us.

### **The project foundations**

The foundation for this work is a person-millennium of largely self-funded research (30 people working for over 30 years) originally conducted by individuals including, for example:

- Richard St Barbe Baker OBE (Awarded by Prince Charles) – founder of Men of the Trees (now International Tree Foundation) extensive author, responsible for planting more trees worldwide than any one.
- James Sholto-Douglas – Plant ecologist. Worked on overseas projects for ODA, UN, etc. horticulture and forestry. Author of several books and specialist on hydroponics also on ecology and others, co-author Forest Farming (agro-forestry) Trustee of Green Deserts.
- Lawrence D Hills – Founder of Henry Doubleday Research Association (HDRA), the world's largest organic gardening group; and overseas projects.
- Dr Christopher Hills – President of the Microalgae International Union from 1965, co-author of Food From Sunlight introduced and cultured Spirulina and Chlorella. Stated methane, benzene and petroleum can be made from algae. He proposed refertilising deserts with microalgae in 1978.
- John Davies OBE – re-organised the British gas industry. Designed continuous cropping in hot climates to make methane gas in large enough amounts to make petrol.
- James Grant – climatologist. Including using trees to induce, or inhibit, rainfall.
- Dr Patrick Ffiske Howden – Australian. Author of Ecologists and active land recovery.

## Project momentum

Interest is growing rapidly, for example:

- A supplier, Great Stuff Hydroponics, is donating the project equipment
- A supplier, Ocean Grown, is donating the sea nutrients
- St Michael's is ready to pilot the process, and a local farm which houses some local destitute is ready to accept hydroponically grown vegetables and adopt the process once established
- A PR company, Top Position, has already issued three press releases and is eager to broadcast a photo/video diary following the project
- Dr Tony Miller of Rothamsted Research Station is providing practical guidance.
- Barclays Bank in Watford has stated that it wants to be part of the project
- Anne Main, MP for St Albans, is helping chase the Department of the Environment for a scientific response to the proposal
- On the afternoon of November 9th a presentation will be held at the White House Hotel to raise the profile of the project to local businesses, to whom green issues are particularly topical at this time.
- In Jan 2008, Greg Peachey is due to address the National Conference of the Best Western Hotel UK Chain with a view to launch similar grass-roots projects in other areas of the UK.

## Simplified outline of desert re-forestation process

1. Starting from the coastline, use solar (or wave) energy to pump sea water inland and desalinate most of it
2. Mix the fresh water with sea water to produce the concentration at which microalgae multiply at maximum rate.
3. Cultivate microalgae in shallow ponds of this 'magic mix'.
4. Harvest microalgae and breakdown using anaerobic bacteria to produce methane gas and liquid/solid fertiliser.
5. Burn methane gas to produce energy, carbon dioxide and water (vapour).
6. Fertilise and grow trees (or other vegetation) in inflatable-walled dome into which the carbon dioxide and water are pumped.
7. When trees are established, extend sea water piping, move dome further inland, and repeat.

