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Batavia Greenhouse Builders Ltd.

Partnership Agreement

Grand Turk Solar Desalination
Greenhouse for Water + Food ™

Summary

This *Partnership Agreement* report is 'Deliverable 8' of the Grand Turk Solar Desalination Greenhouse (SDG) Viability Study. It is addressed to the supporting agency, CIDA INC; people and government of Turks and Caicos Islands (TCI); suppliers and advisors to the project, and potential investors and financiers.

A joint venture agreement was reached between Batavia Greenhouse Builders Ltd., Canada (Applicant) and Paul Day, Turks and Caicos Islands (Host Country Partner) and four other entities that bring additional technical and business expertise to the enterprise.

The joint venture company is a Turks and Caicos Islands incorporated company to be named **GT Water and Food Production Ltd.**

The agreement involves a joint venture with the participants having financial, organizational, and marketing responsibilities.

Immediate next steps include formalizing the share structure, facilitating corporate communications, press release to the TCI media, financing, drilling a test bore hole, and drafting a Development Agreement.

Delivered to CIDA INC February 12, 2003. Author: Roland V. Wahlgren*, Atmoswater Research, 2116 Grand Boulevard, North Vancouver, BC, V7L 3Y7.

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1 Description

This report is addressed to the Canadian International Development Agency Industrial Cooperation Program (CIDA INC) as ***Deliverable 8 of the Contribution Agreement E4936-K060831 with Batavia Greenhouse Builders Ltd. for the Viability Study — Solar Desalination Greenhouse — Turks and Caicos Islands.***

The Grand Turk Solar Desalination Greenhouse (GT SDG, Fig. 1-1) comprises a system of producing fresh water and food along arid subtropical or tropical coastlines by:

1. Bringing saline groundwater into a greenhouse and encouraging evaporation of pure water molecules into the air inside the building;
2. Cooling the greenhouse space by evaporative cooling;
3. Condensing pure fresh water out of the greenhouse air by means of a condenser array cooled by a flow of cool saline groundwater pumped from depths of 100's of metres; and
4. Irrigating the greenhouse crop with condensed fresh water.

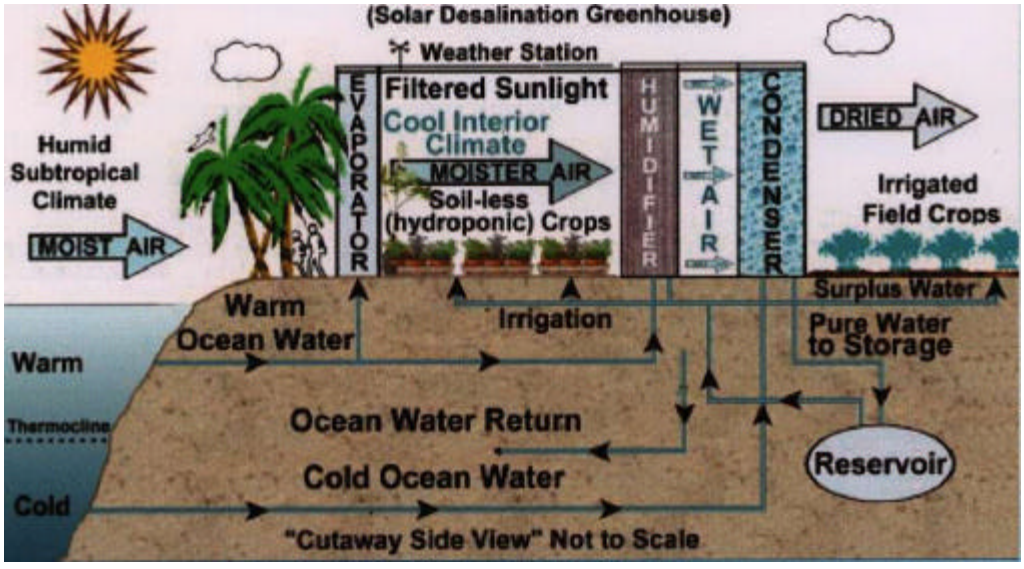

Fig. 1-1. Components of a solar desalination greenhouse.

Earlier Viability Study reports provided essential background for this *Partnership Agreement* report. The *Technical Feasibility Study* report (Wahlgren, 2002) described the historical development of solar desalination greenhouse technology and presented details of our proposed site on Grand Turk. It discussed the functioning of our thermodynamic simulation model, forecasts and crop models. A design for the greenhouse was presented along with the rationale for optimizing performance. The results of the study included water production and greenhouse climate values, outline drawings, equipment requirements, energy consumption estimates, and approximate capital cost. The *Financial and Commercial Viability Study* (Crocker and Wahlgren, 2002) demonstrated that the GT SDG could be the core of a profitable commercial enterprise. The *Regulatory Framework Analysis* (Merry, 2002) reviewed local laws, regulations, and policies that will affect construction and operation of the Greenhouse. The *Environmental Impact Assessment* (Hall, 2002; McNary Wood and Turner, 2002) mentioned many issues that will affect the business operation so that the environment is protected. A *Training Plan* (Crocker and Wahlgren, 2002) discussed training needs and a plan to be activated once construction of the GT SDG has commenced. The *Gender and Social Integration Analysis* report (Holm, 2002) reviewed gender and social issues that have a direct bearing on the operation of a business in Grand Turk.

1.1 Partnership Agreement

The joint venture agreement (*Appendix*) is between the applicant, Batavia Greenhouse Builders Ltd., the host-country partner, Paul Day, and four other entities that bring additional technical and business expertise into the enterprise.

The agreement is to form a joint venture to build a facility and operate a new company**, GT Water and Food Production Ltd.** The new company will use a Solar Desalination Greenhouse system to cool the enclosed greenhouse space. Atmospheric water vapour processing technology will provide fresh water to irrigate temperate-climate, high-value vegetable crops that will thrive in the relatively cool environment inside the greenhouse. Fresh water can be sold to beverage manufacturers or to nearby residences and businesses. Crops can be sold wholesale to retail grocers, institutions, restaurants, and resorts.

The agreement involves:

- a joint venture;
- financial responsibilities;
- organizational responsibilities; and
- marketing responsibilities.

Limits of ownership in the venture are deferred until financing is committed for construction.

1.2 Study team

Bob Crocker, Site Specific Structures, and Roland Wahlgren, Atmoswater Research, met regularly with Aar Koeman, Managing Director, Batavia Greenhouse Builders Ltd. and Terrence Nylander, our advisor for Business and Corporate Development.