DRIP IRRIGATION - ISRAELI INNOVATION THAT HAS CHANGED THE WORLD

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AGENDA

About Netafim
CR at Netafim
Technology
Good Practices
NETAFIM™ AT A GLANCE

- Founded in 1965 at Kibbutz Hatzerim – introduced breakthrough concept of drip irrigation
- Born out of a need to make the Israeli desert bloom
- Ag2Ag business model
- Global leader in drip and micro-irrigation solutions

Kibbutz Hatzerim

THEN

NOW
GLOBAL PRESENCE

16 manufacturing plants
27 subsidiaries

NETAFIM
GROW MORE WITH LESS
NETAFIM'S DRIP IRRIGATION RECOGNIZED AS WORLD CHANGING INNOVATION

A special set of stamps was issued by the Israeli postal service for the International Expo 2010. The set features Israeli innovations that have changed the world in three main areas: agriculture, high-tech and medicine.

AGRICULTURE – IRRIGATION

“Netafim”, global pioneer of drip irrigation, has led Israel’s worldwide success in the realm of efficient irrigation and conservation of water for agriculture since its establishment. Drip irrigation, the most efficient and advanced irrigation system in the world, was invented in Israel in the 1960’s. The system was developed based on research by engineer Simcha Blass who discovered that plants develop better in close proximity to a designated water source. The “Netafim” company was established at Kibbutz Hatzerim in 1965 and proceeded to spread the word about drip irrigation throughout the world.”

(Israel postal service, stamps information sheet)
GLOBAL RECOGNITION

- **UN CEO Water Mandate:** Networking around water issues: Private sector, Civil society, UN & Government agencies
- **LEAD:** a new platform for corporate sustainability leadership
- **UN Human Rights Council:** Good Practices in Water, Sanitation and Human Rights
- **Food Sustainability – A Guide for Private Sector Action:** Netafim first as “Technology for improved water efficiency”
- **Core Advisory Group - Sustainable Agriculture Business Principles**
- **Grow Africa, Committee on Food Security, Global Food Security Forum etc.**
Netafim received the Stockholm Industry Water Award at a ceremony on September 3 during the World Water Week in Stockholm.

Selection committee citation: “Netafim’s remarkable achievements, helping farmers across the world to ‘grow more with less,’ are directly contributing to a more water- and food-secure world.”
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Our Commitment to Sustainability

- Part of our culture at Netafim
- Enhancing our competitive advantage
- At Netafim It is real - not green wash
- Complying with strict regulations and standards
- Our Business is Sustainability
- DOING WELL by DOING GOOD

Environment, Governance, Social Responsibility

Living Our Values
- Environmental Excellence
- Good Governance
- Social Responsibility

Long term business success

Adapted from Shell 2003
Social Responsibility

- Focused social activities: Water, Food, Knowledge
- In our communities and in communities around our projects
- Emphasis on capacity building
Corporate Governance

- Code of conduct, ethical code
- Compliance, beyond compliance
- Transparency, audit & reporting
- Human rights, workplace practices
Environment: Water Scarcity

Source: Blue Planet Run, R. Smolan, 2008
AGRICULTURE: LARGEST CONSUMER OF WATER

- About 70% of available water goes to agriculture
- Only 17% of all cultivated areas are irrigated, yet provide 40% of global food production
- 79% of irrigated areas use flooding

Saving 15% in agricultural use will more than double available water for domestic use

Source: ICID - CIID
WATER CONSUMPTION FOR AGRICULTURE IN THE SUPPLY CHAIN

- 1 pair of jeans: 4,100 liters
- 1 T-shirt: 2,700 liters
- 1 glass of beer: 75 liters
- 1 apple: 70 liters
- 1 liter of milk: 1,000 liters
- 1 kg of rice: 3,400 liters
- 1 cup of tea: 30 liters
- 1 slice of bread: 40 liters
- 1 kg of beef: 15,000 liters

Source: Blue Planet Run, R. Smolan, 2008
FLOOD & FURROW IRRIGATION PROBLEMS

- Water source depletion and contamination, excessive use of chemicals
- Greenhouse gases emitted to the environment, thereby boosting a warming trend
KEY ISSUES & CHALLENGES

- Food, fodder, fiber and biofuel: competing for the same resources
- Water: critical and limited resource
- Arable land: finite resource
- Energy: rising prices
- Social, political and environmental concerns: poverty alleviation, gender equality, urbanization
- Drip irrigation holistically addresses the point where all these challenges intersect.
Leadership Is Responsibility

The CEO Water Mandate

- 70 global companies as of January 2011
- Partnership between business leaders and UN
- Promotes sustainable water management, technology development, and performance management
Leadership Is Responsibility

- New platform for corporate sustainability leadership
- We are among 54 companies that were invited to join
- Linkages between private sector, UN agencies, funds and programs
- Involvement with non-business contributors, including UN entities, civil society organizations, academic institutions, and other interests.
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DRIP IRRIGATION

IRRIGATE THE PLANT, NOT THE SOIL

- Optimizes moisture and aeration conditions
- Ensures precise quantities of water and nutrients directly to root zone
- Reduces release of gases to atmosphere due to imprecise fertilizer usage
- Increases yields and enhances productivity per unit of soil and water
- **NUTRIGATION™**
OPEN-FIELD IRRIGATION SOLUTIONS

LOW-PRESSURE SYSTEM (LPS™)
CMT – CROP MANAGEMENT TECHNOLOGY

- Effective irrigation and fertigation processes require the integration of intelligent planning, managerial and maintenance practices
- Valuable, real-time field data result in solutions that benefit farmers, letting them better control and manage their crops
- A platform for management, water savings and increased yields
FAMILY DRIP SYSTEM (FDS™)

- Comprehensive gravity-based drip irrigation system developed for smallholders in developing and least developed countries (LDCs)
- Provides growers with the know-how and means for self-sufficient agricultural production
- Economical and easy to operate
- Maximizes productivity using existing resources
- Requires no additional investment in infrastructure
- Incorporates planning, training, technical and agronomic field support
GREENHOUSE RESULTS: STRAWBERRIES
120T VS. 30T

Yesha, Israel
GREENHOUSE RESULTS: TOMATOES
650T vs. 100T

Westland, The Netherlands
TRAINING & CAPACITY BUILDING

- Part of technology
- Essential for sustainable productivity
- More than just technology transfer; capacity building covers many areas
- Treating participants as an equal
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ISRAEL: ARAVA DESERT
ISRAELI ARAVA DESERT - IMPACT

- 4,500ha
- 20 farming settlements
- 65% of all Israeli vegetable exports
- Rainfall as little as 20mm/year
- Partners: Government, NGOs, private sector, local farmers
Andhra Pradesh Micro Irrigation Project

- Project area: 434,352ha
- Project cost: $249 million
- Scope: 187,000 farmers (March 2008) with plots of >1ha
- Crops: Fruits, vegetables, spices, field crops
- Governmental support: Subsidies
- Subsidy level: 50%-70% of the value of drip irrigation equipment
- Banking support: Loans
APMIP - IMPACT

**WATER SAVING**
- 76 to 100% saving (3.55%)
- No saving (4.45%)
- 51 to 75% saving (20.14%)
- 26 to 50% saving (50.79%)

**YIELD INCREASE**
- 76 to 100% increase (4.32%)
- No yield increase (6.13%)
- 51 to 75% increase (20.21%)
- 26 to 50% increase (41.78%)
KENYA: KITUI

- Family Drip System (FDS™)
- Kamale and Wingoo water catchments zones in the Nzambani Districts in the semi-arid Eastern Province
- 200 poor small-scale vegetable growers
- Mostly women and elderly people who could not continue bucket irrigation
- Involved a local primary school
- Involved a group of HIV-positive women
KITUI - IMPACT

- 140% increase of harvested yield, 200% increased income
- 80% increase in vegetable growing capacity and knowledge (through pre-post learning training impact test tool)
- Other basic farm management related knowledge increased of 65% (through pre-post learning training impact test tool).
- Moving from bucket irrigation to drip saves around 60% water
Good Practice: Yellow River, China

- Zhongwei City, Ningxia Province, China
- Turnkey irrigation system for 2,000 hectares of desert land
- More than 6,000 farmers
- Small parcels (Approx. 2.5 Ha. Each)
- 2 cash crops: Chinese Dates and Watermelons
- Watermelons are grown between the rows of the Date trees, maximizing land use, giving the farmers quick income until the dates mature.
Yellow River - Impact

- Reduce the amount of water pumped from the Yellow River, so that cities downstream will have water as well
- Improve the lives of local farmers by increasing their income from agriculture, slow down migration to the cities, a process accompanied with poverty, increased social unrest and crime rate
- Reduce amount of water used for agriculture, so more water is left for domestic and other uses
- Use marginal land for agriculture purposes
- Stop desertification – a serious challenge for China
- Partners: Farmers, Chinese Government at all levels (village, county, province and Central Government in Beijing), and Netafim
Good Practice: South to South
Sugar Cane, Swaziland
Swaziland - Impact

- 11,600 Ha. Sugar Cane at the Simunye Sugar Estate
- A cost analysis of seven different irrigation options was undertaken and the one that offered the best return was conversion of the dragline sprinkler system to subsurface drip
- A post investment audit* confirmed a sucrose increase of 15% and water saving of 22% compared to the sprinkler system, better than originally expected. Further analysis revealed even better figures

*Booker Tate Limited, Oxfordshire, UK

Relative value of project benefits
Sustainable Desert Community
Part of JNF work with Bedouin communities in Israel’s Negev region
A sustainable, community-based organic farming, adapted to a desert environment.
combine Bedouin aspirations, values and experience in desert agriculture, with sustainability principles and cutting edge technologies
EVERY DROP COUNTS
THANK YOU

Naty Barak
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