

Environmental Irrigation Background and Future

CSD-16

UN Commission on Sustainable Development

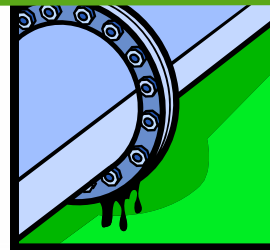
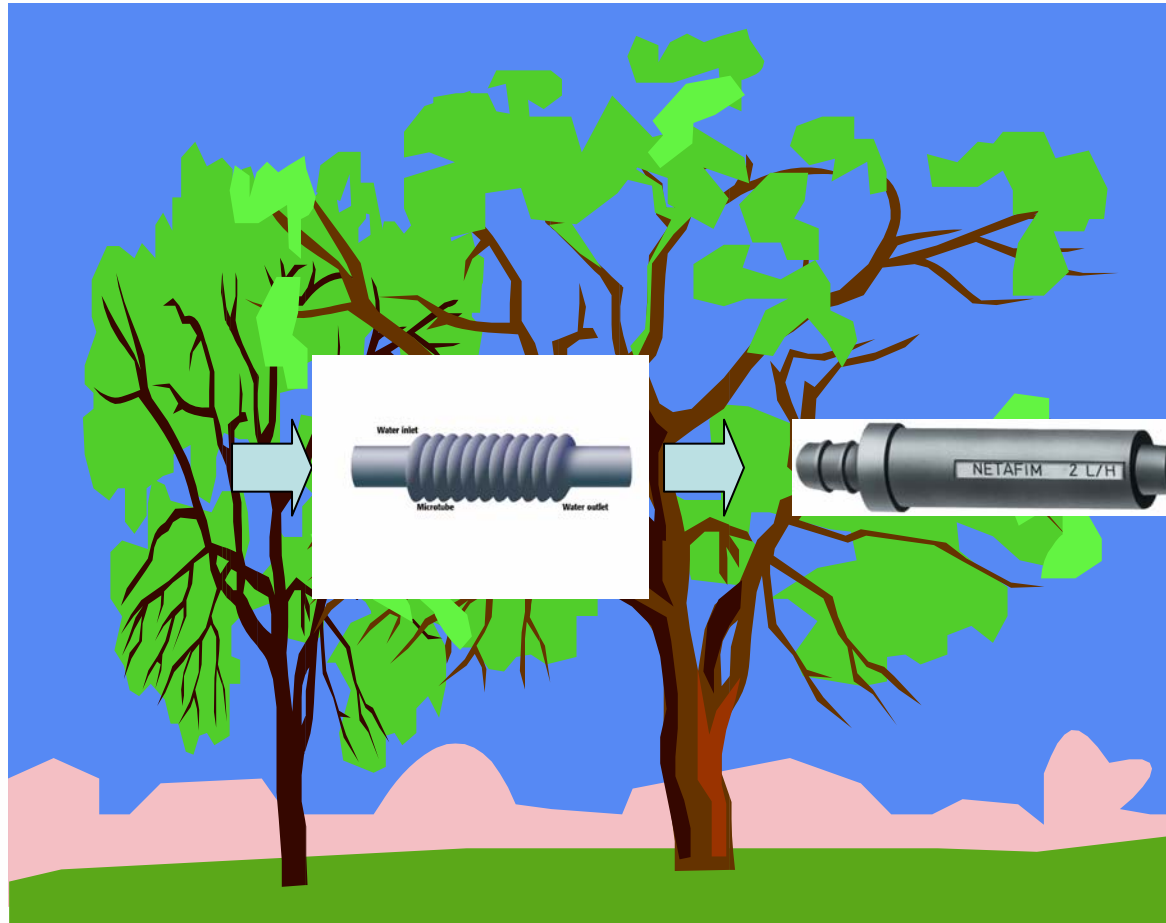
NYC, May 2008





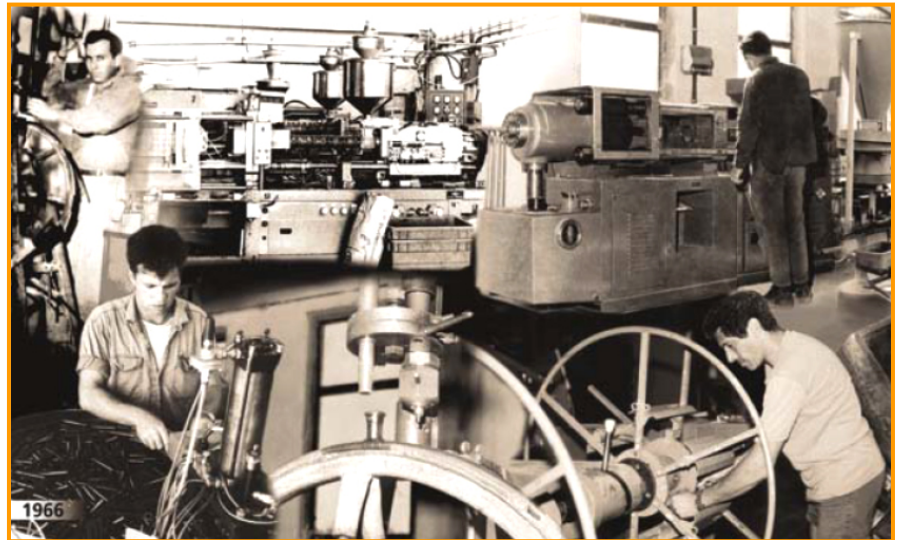
Content

- Background
- Drip Irrigation basics
- The threats and trends
- More with less – some solutions





- Born out of a need to make the Israeli desert lands bloom
- Simcha Blass and Kibbutz Hatzerim founded Netafim in 1965 with the concept of drip irrigation
- Netafim joined by Kibbutz Magal (1975)
Kibbutz Yiftach (1979)
- Ag2Ag Business





About Netafim

Our Vision

- To be the global leader in innovative irrigation-based solutions and water technologies.



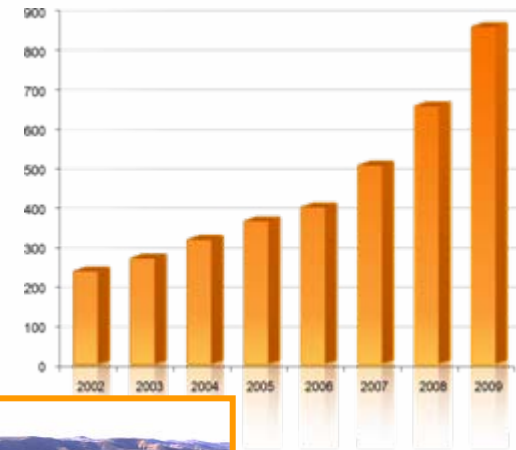
Our Mission

- Meet everyday irrigation needs in **every location**
- Anticipate the demands of existing and potential **customers**
- Respond creatively and **competitively**
- Supply **reliable, comprehensive solutions and services**



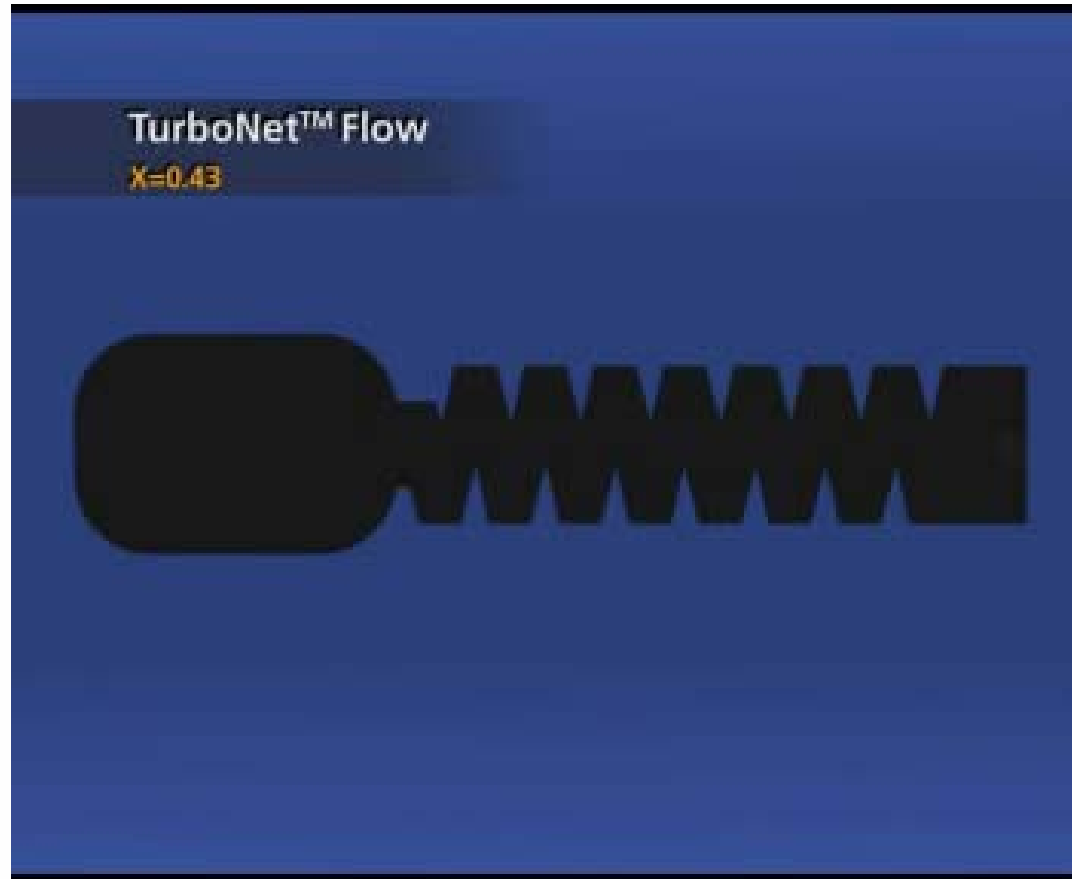
Netafim™ at a Glance

- Total revenues 2007 – \$500 M
- Employees worldwide – above 2,400
- Active in 112 countries on 5 continents
- 33 subsidiaries
- 17 manufacturing plants worldwide





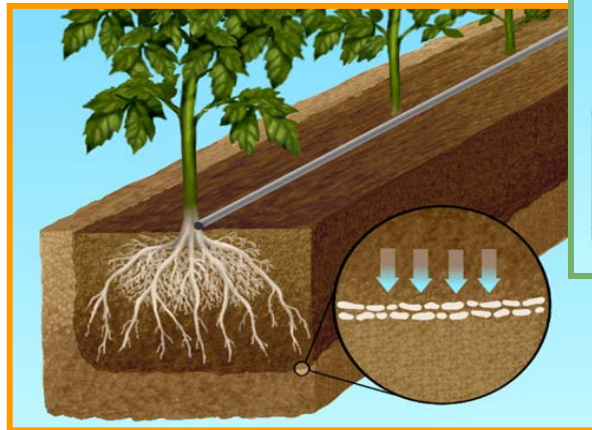
The Principle





Drip Irrigation Advantages

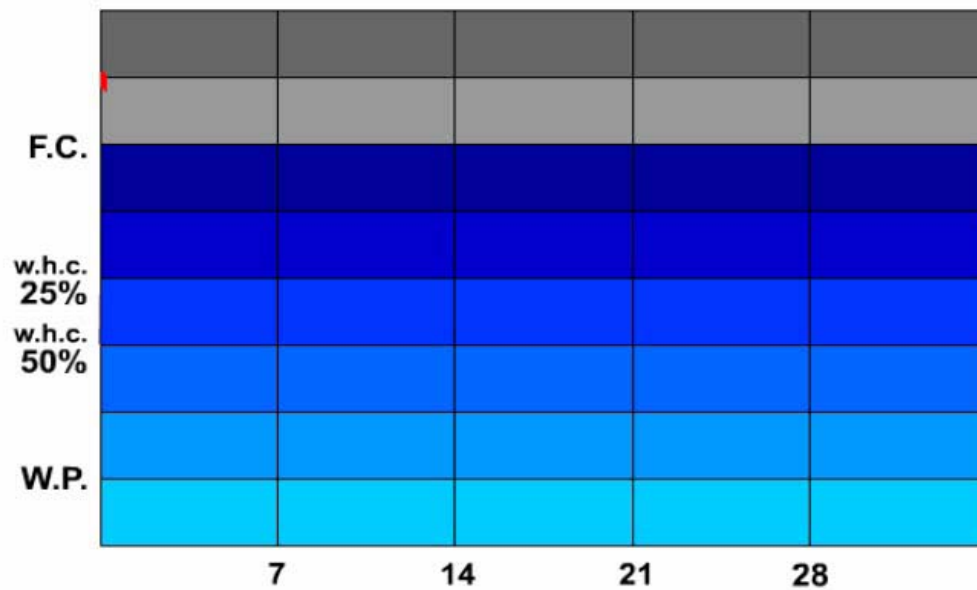
- More efficient, accurate use of water & nutrients
- Prevents soil erosion
- Lower evaporation rate prevents run off, deep percolation & leaching
- Carries water & nutrients directly to the root zone
- Facilitates preplanning of plant growth & harvest schedules
- Saves water & energy





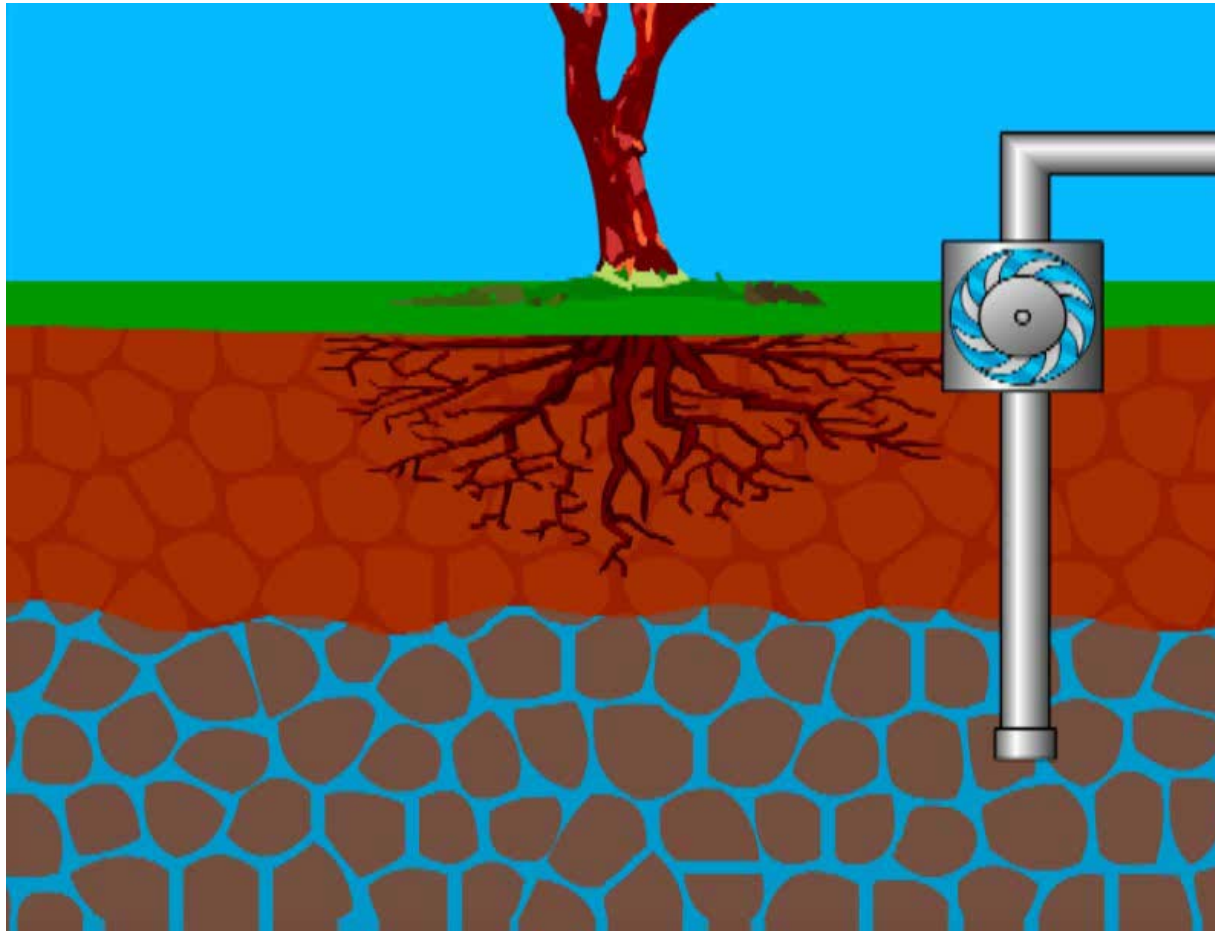
Flood

Moisture Status Drip Vs. Others





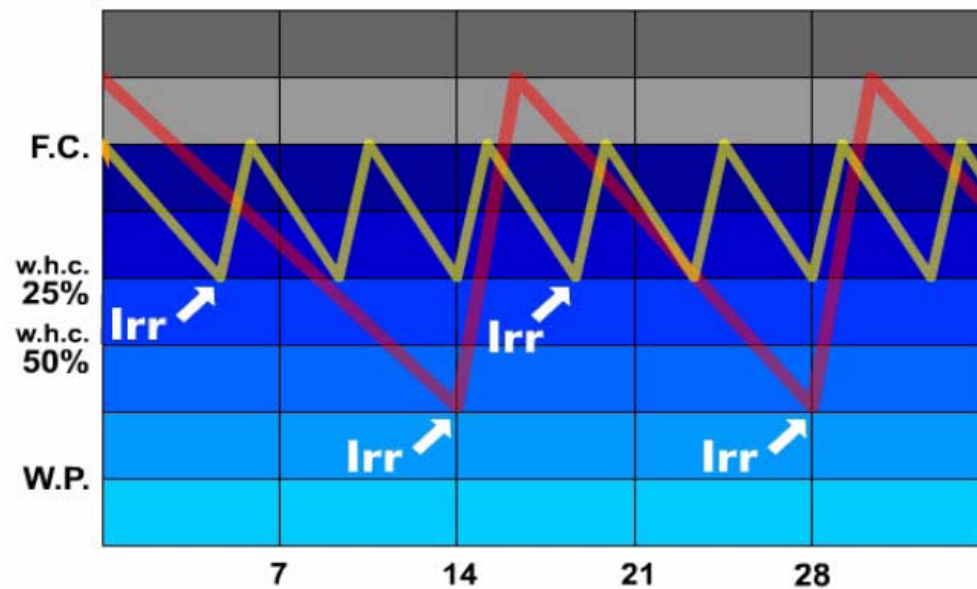
Flood – aquifers pollution





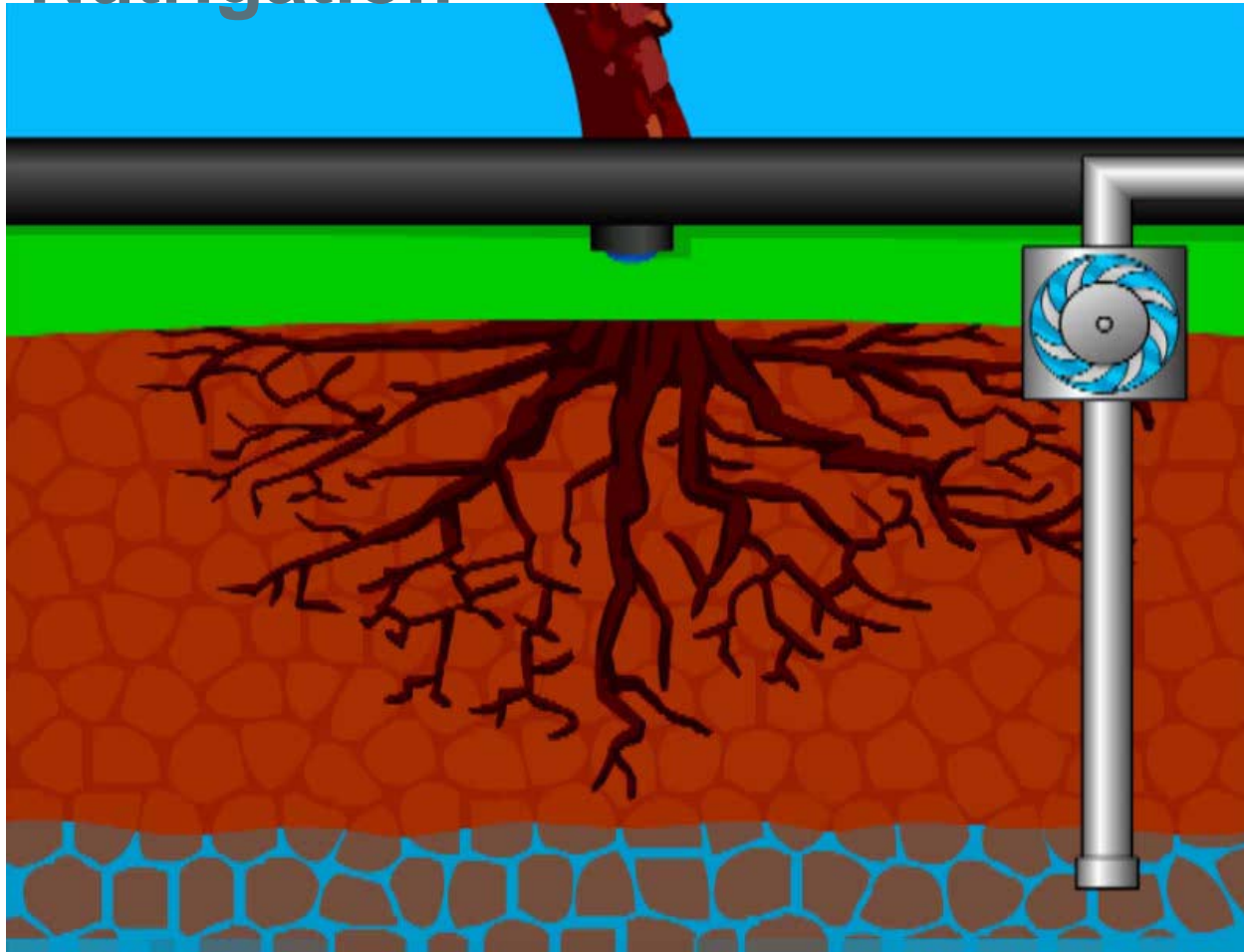
Drip

Moisture Status Drip Vs. Others





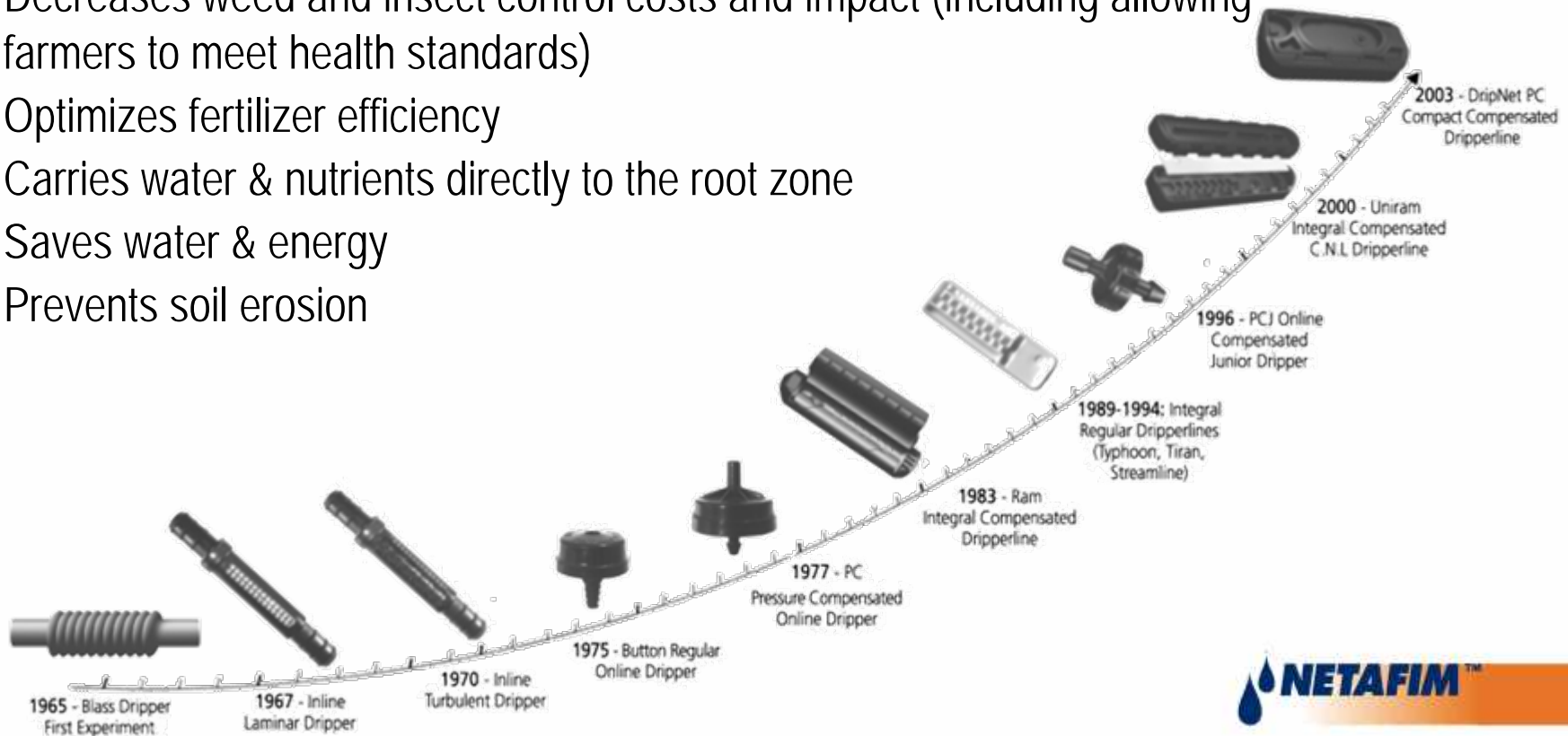
Drip - Nutrigation





Drip Irrigation

- Increases crop yields with more efficient, accurate use of water & nutrients
- Lower evaporation rate, prevents run off, deep percolation & leaching
- Decreases weed and insect control costs and impact (including allowing farmers to meet health standards)
- Optimizes fertilizer efficiency
- Carries water & nutrients directly to the root zone
- Saves water & energy
- Prevents soil erosion





Cultivated Land Worldwide

- 1,628 M/Ha – Total world Agriculture Area
- 277 M/Ha – Currently under Irrigation
- 6 M Ha. are Drip Irrigated





Threats We All Face

Global Warming
WATER SCARCITY
Food Supply
Energy Crises



Environmental Challenges

Reduce Gas Emission
WATER CONSERVATION
Secure Food Supply
Energy Savings



Food Supply

World population:

- 2007 - 6.3 Bn.
- 2030 - 8.1 Bn (Approx) *

Food availability does not keep pace with population growth.

- 2030 - food consumption worldwide is expected to increase by >30%*

Source:

* UN Report 2001

** ICID - 'WATER FOR FOOD AND RURAL DEVELOPMENT, July 2001





Food Supply – what can be done?

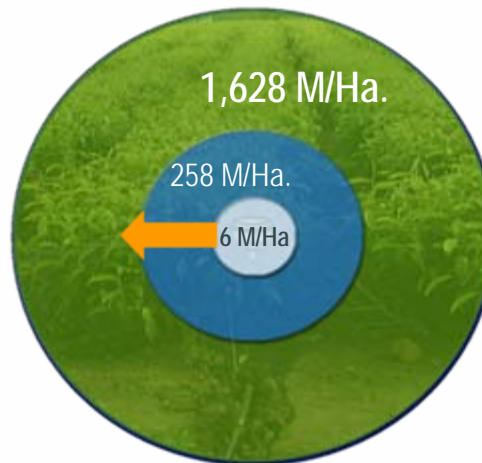
- Efficient and rational management of existing resources (water and soil) to **produce more food**.
- Provide growers with the **know-how and means** for agricultural production, economical and simple to operate
- **Expand Irrigation areas** to crops that relied on rain-fall only





Irrigation is a key component of the Water Revolution

Drip Irrigation is a key component in
Sustainable Water Management Solutions





Cultivated Land Worldwide

■ 1,628 M/Ha – Total world Agriculture Area

■ 277 M/Ha – Currently under Irrigation

17% of total agricultural land area supplies about 40% of the world's food

■ 6 M Ha. are drip irrigated

Crop productivity values:

- Rain fed 1.0-2.0 tons/Ha

- Irrigated 3.0-5.0 tons/Ha





Drip Irrigation Revolution

Nano Irrigation Concept

Micro Irrigation Concept

Flood Concept

- *World Food Problems*
- *Yield :Ton per Hectare*

- *World Water Crises*
- *Yield: Ton per M³ Water*

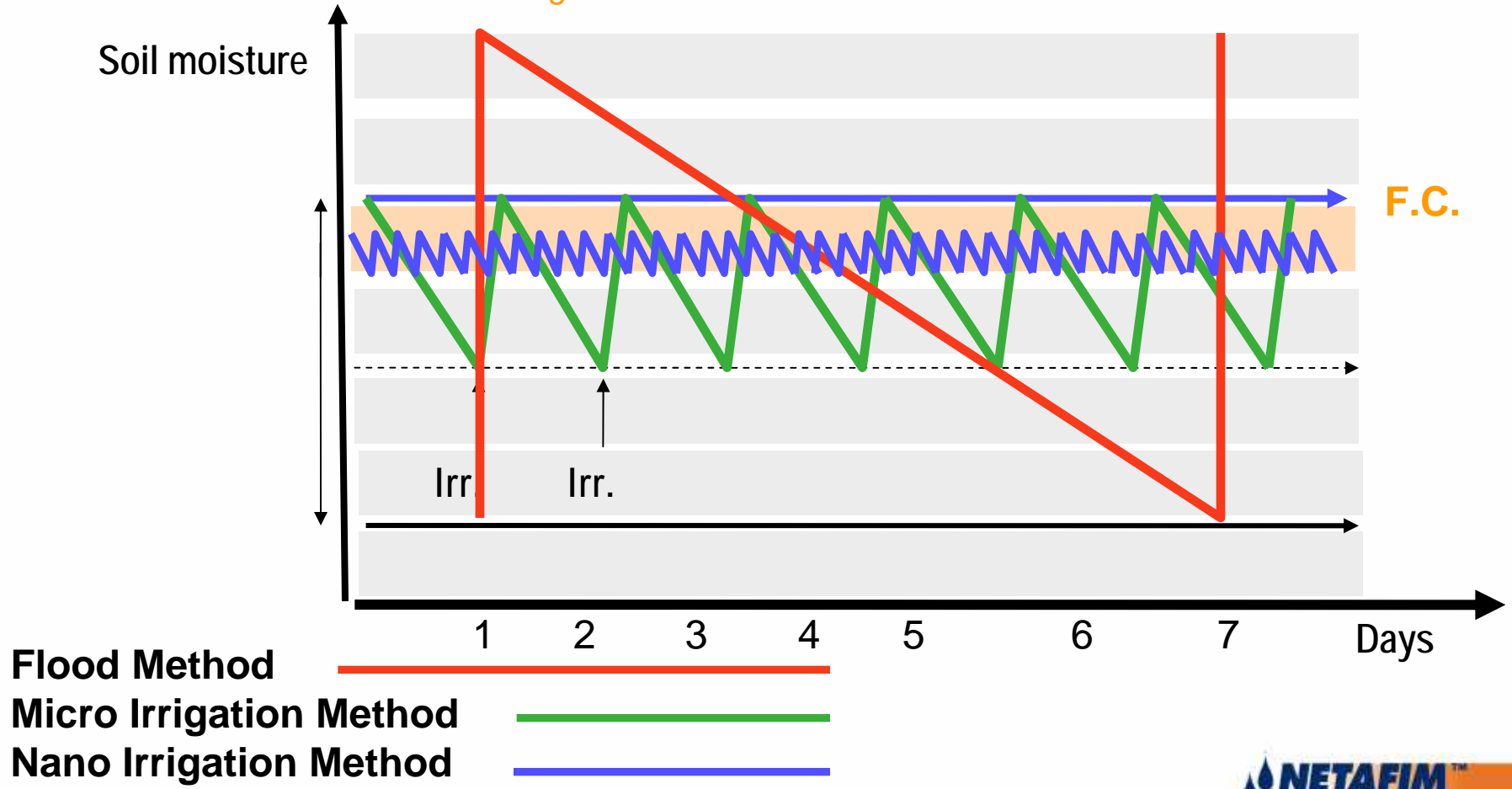
1960

2000

2025



Needs vs. Demands Efficient Irrigation Schedule





Nano Irrigation Concept



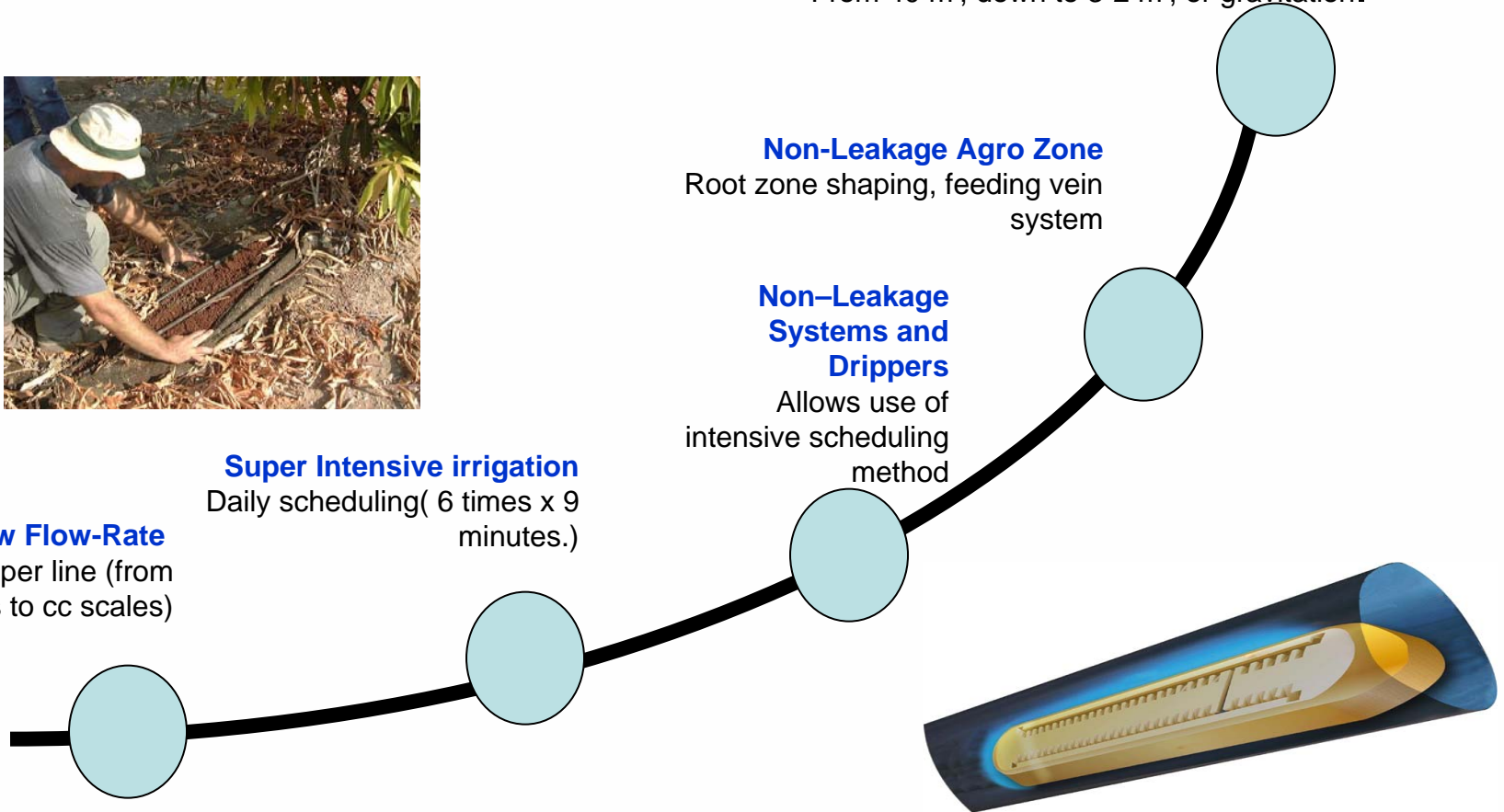
Super Low Flow-Rate
New dripper line (from liters to cc scales)

Super Intensive irrigation
Daily scheduling (6 times x 9 minutes.)

Non-Leakage Agro Zone
Root zone shaping, feeding vein system

Non-Leakage Systems and Drippers
Allows use of intensive scheduling method

•Super Low-Pressure Operation
From 40 m', down to 3-2 m', or gravitation.





More with Less!

Solutions adapted for any need:

FDS – Family Drip Systems

LPS – Low Pressure Systems

Greenhouses



More with Less!

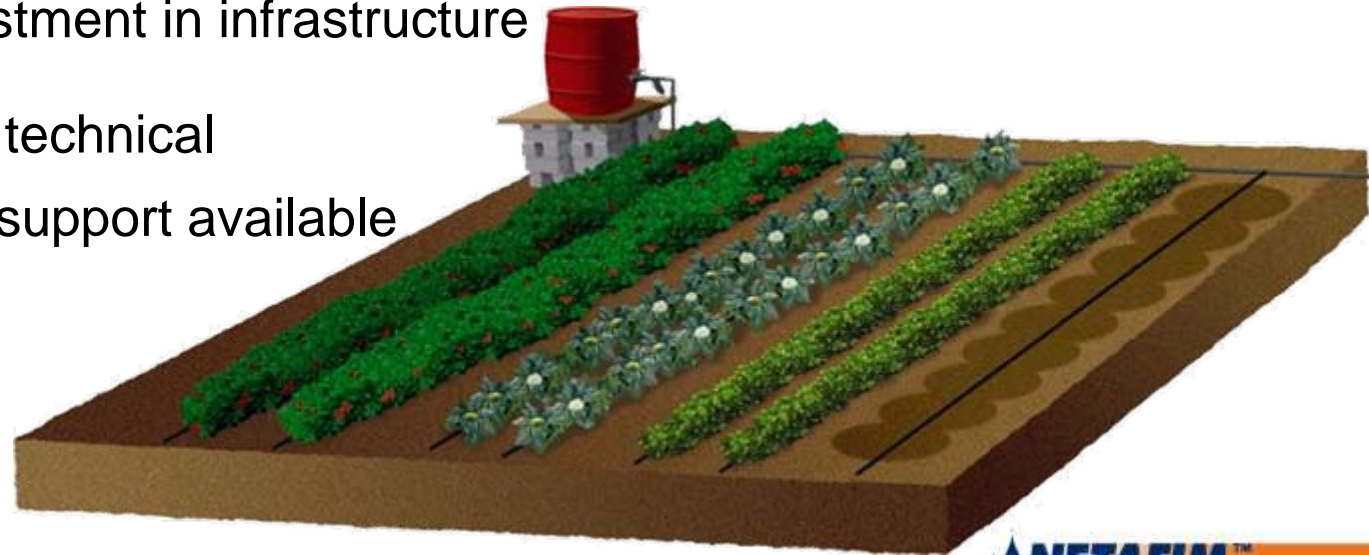
FDS

Family Drip System



Family Drip System (FDS™)

- A comprehensive gravity-based drip irrigation system based on Netafim's low volume drip-irrigation technology
- Maximizes productivity using current and existing resources
- No additional investment in infrastructure
- Planning, training, technical & agronomic field support available







FDS →



Traditional →





Family Drip System (FDS™)

Crop	Conventional		FDS		Revenue Increase	
	Yield (Kg)	Revenue (\$)	Yield (Kg)	Revenue (\$)	%	\$
Tomatoes	2000	1215	7,200	6171	508	4956
Melons	2000	999	2950	1685	167	686
Eggplants	3000	1392	8150	4657	335	3265
Lettuce	2000	928	7800	5013	540	4085
Cabbage	3000	1070	11200	4800	449	3730

Yield and Revenue from five vegetable species, each planted in a 500m² plot and irrigated with a conventional and with a Family Drip System in Niamey-Niger

Values are the total of two (June-Oct. and Nov.-April) production seasons per year



More with Less!

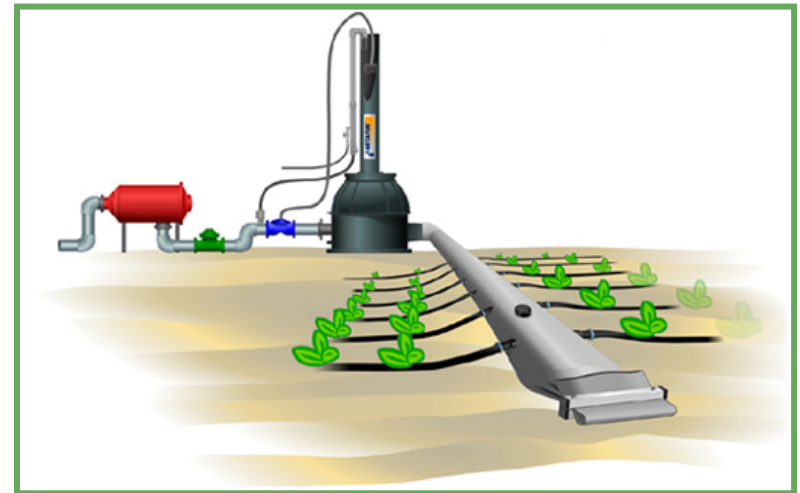
LPS

Low Pressure System



Low Pressure System™ - LPS™

- Increases yield production & quality.
- Decreases contamination of water sources & depletion of wells, aquifers & rivers.
- Prevents soil erosion.
- Ensures plants get exact water & nutrient requirements.
- Trouble-free, easy installation & maintenance.
- Saves water & energy.





Low Pressure System™ - LPS™





Low Pressure System™ - LPS™





Low Pressure System™ - LPS™





Low Pressure System™ - LPS™





Low Pressure System™ - LPS™

Onion

90 T vs. 45 T

Cotton

55 T vs. 40 T





“Among the many things I learnt as a president, was the centrality of water in the social, political and economic affairs of the country, the continent and the world”

*Nelson Mandela,
World Summit on Sustainable
Development, 2002*





Thank You

Natan Barak
Commercial Director - EMEA
NETAFIM



