GOOD PRACTICES ON WATER AND SANITATION FROM A HUMAN RIGHTS PERSPECTIVE

Lisbon, November 2010

Naty Barak

Head of Sustainable Development

NETAFIM™
GROW MORE WITH LESS

AGENDA

WATER SCARCITY

FLOOD VS. DRIP

GOOD PRACTICE: KENYA

GOOD PRACTICE: INDIA

GOOD PRACTICE: CHINA

GOOD PRACTICE: CHILE

SUMMARY

ENVIRONMENTAL AWARENESS

2/3 OF EARTH'S SURFACE IS WATER

2.5% FRESH WATER

0.3%
RIVERS & LAKES

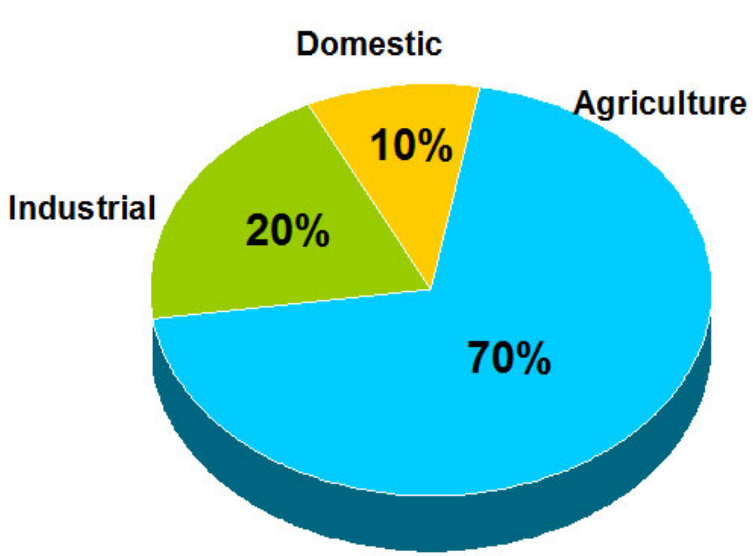
0.007% OF TOTAL IS AVAILABLE

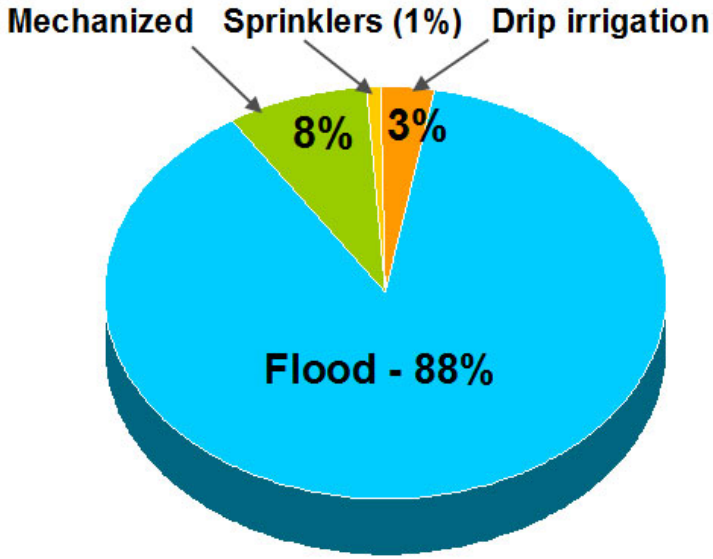
NETAFIM™
GROW MORE WITH LESS

THE WORLD IS FACING A FRESHWATER CRISIS

NETAFIM™
GROW MORE WITH LESS

70% OF AVAILABLE WATER GOES TO AGRICULTURE
88% OF IRRIGATED AREA USES FLOODING





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

Source: ICID - CIID

NETAFIM™
GROW MORE WITH LESS

AGENDA

WATER SCARCITY

FLOOD VS. DRIP

GOOD PRACTICE: KENYA

GOOD PRACTICE: INDIA

GOOD PRACTICE: CHINA

GOOD PRACTICE: CHILE

SUMMARY

FLOOD & FURROW IRRIGATION

- Water source depletion and contamination, excessive use of chemicals
- Greenhouse gases emitted to the environment are boosting a warming trend

NETAFIM™
GROW MORE WITH LESS

PRECISE IRRIGATION PRESERVES RESOURCES:

Irrigating the Plant, Not the Soil

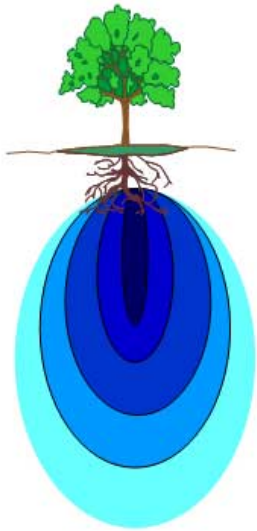
NETAFIM™
GROW MORE WITH LESS

Moses led us to Israel, but did not pass on his technology to us…

Moses Drawing Water from the Rock
Zabbar Parish Church

ADVANTAGES OF DRIP IRRIGATION

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



NETAFIM™
GROW MORE WITH LESS

TRAINING & CAPACITY BUILDING

- Essential to the success
- More than just technology transfer. Capacity Building in many fields
- Done at “Eye level…”

NETAFIM™
GROW MORE WITH LESS

AGENDA

WATER SCARCITY

FLOOD VS. DRIP

GOOD PRACTICE: KENYA

GOOD PRACTICE: INDIA

GOOD PRACTICE: CHINA

GOOD PRACTICE: CHILE

SUMMERY

KITUI, KENYA

- Kamale and Wingoo water catchments zones in Nzambani Districts, the semi arid Eastern province of Kenya
- 200 poor small scale vegetable growers
- Mostly women and old people that cannot continue irrigating with buckets from the wells
- One local primary school
- A group of women HIV positive

NETAFIM™
GROW MORE WITH LESS

FAMILY DRIP SYSTEM (FDS™)

- A comprehensive gravity-based drip irrigation system, developed for Small Holders in developing countries
- Provides growers with the know-how and means for self sufficient agricultural production
- Economical and simple to operate
- Maximizes productivity using existing resources
- No additional investment in infrastructure
- Incorporates planning, training, technical & agronomic field support

NETAFIM™
GROW MORE WITH LESS

THE PARTNERS IN THIS PROJECT

- FAO: main donor
- Amiran Kenya: Local representative of Netafim, supplying fertilizers, training, installation and monthly visits on each plot
- Government of Kenya: Ministry of Agriculture, district agricultural office, crucial for the sustainability of the project
- Agrosphere (NGO): Fundamental role in the following:
  - Group formation and empowerment
  - Capacity building process at the various levels: extension officers of the ministry of agriculture, group leaders (key factor for the group performance), farmers
  - Bridging between all partners different and sometimes conflicting interests

FINANCING

- Farmers pay US$10, an affordable commitment
- Mainly FAO through Agrosphere (the NGO)
- Agrosphere is considering an “adopt a farmer, buy him a kit“ campaign

NETAFIM™
GROW MORE WITH LESS

TRAINING, AGRONOMICAL AND TECHNICAL

- Basic concepts on vegetable growing, fertilization and irrigation
- Nursery establishment and management
- Compost making, organic fertilization
- Plot preparation, seed beds, transplanting and spacing
- Drip kit installation, maintenance and operation
- Pest and disease control

NETAFIM™
GROW MORE WITH LESS

OTHER TRAINING

- Agriculture as a business: the mental shift.
- Water catchments area management and basic erosion control methods.
- Group dynamics: participation, democracy, age and gender balance
- Group leadership (with two days training / retreat for all the groups leaders)
- Project management and planning
- Crop calendar timing and prices fluctuation / marketing seasons
- Bookkeeping and crop production records keeping.
- A few meetings of informal discussions: HIV, Human Rights, Gender, leadership related issues

ENVIRONMENT

- Soil and water lab tests are done on each plot, searching for heavy metals, pollutants and bacteriological contamination
- All agrochemicals provided by Amiran are Euro GAP (Good Agricultural Practice) compliant.
- Agrosphere plans to introduce organic farming training in the next phase

NETAFIM™
GROW MORE WITH LESS

COMMUNITY

- The project is totally gender, age and socioeconomically balanced
- Fully participatory and grass root based
- During selection of participants priority was given to the poorest
- All project decisions, work plans, deadlines, training contents and events were decided openly with full transparency

NETAFIM™
GROW MORE WITH LESS

RESULTS

- 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

NETAFIM™
GROW MORE WITH LESS

AGENDA

WATER SCARCITY

FLOOD VS. DRIP

GOOD PRACTICE: KENYA

GOOD PRACTICE: INDIA

GOOD PRACTICE: CHINA

GOOD PRACTICE: CHILE

SUMMARY

THE INDIAN APMIP

- Andhra Pradesh Micro Irrigation Project
- Project area – 434,352 ha
- Project cost $249 million
- 187,000 farmers (March 2008), holding plots of 1 hectare and up
- Crops: Fruits, Vegetables, Spices, Field crops
- Governmental support in the way of subsidy.
- Subsidy level between 50% and 70% of the value of the drip irrigation equipment
- Banking system supporting the program with loans

NETAFIM™
GROW MORE WITH LESS

THE INDIAN MODEL

- Farmers are owners of small plots with water source and pumping unit
- All farmers practice a mix of commercial and subsistence production
- The family provides the majority of labor
- The farm provides the principal source of income
- Payback period for the equipment: 1.5 years (average)

NETAFIM™
GROW MORE WITH LESS

APMIP – VISION

- Poverty alleviation
- Productive agriculture
- Farm profitability
- Food & Ecological security
- Employment generation
- Human resource development
- Higher water & energy efficiency in agriculture sector
- Reducing cost of production
- Preserving the social fabric of rural communities

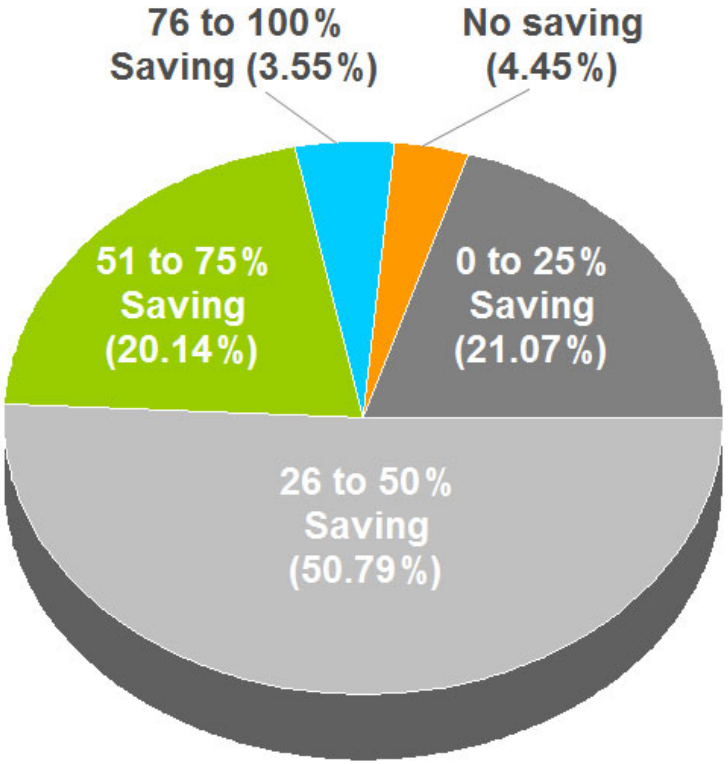
TRAINING & CAPACITY BUILDING

- Training: classroom, on-field and field visits by experts
- Method demonstrations – Fertigation™, planting, pruning…
- Result demonstrations – germination irrigation, acid treatment…
- Study tours
- Participatory meetings with input suppliers (seeds, fertilizers, pesticide and financing institutions)

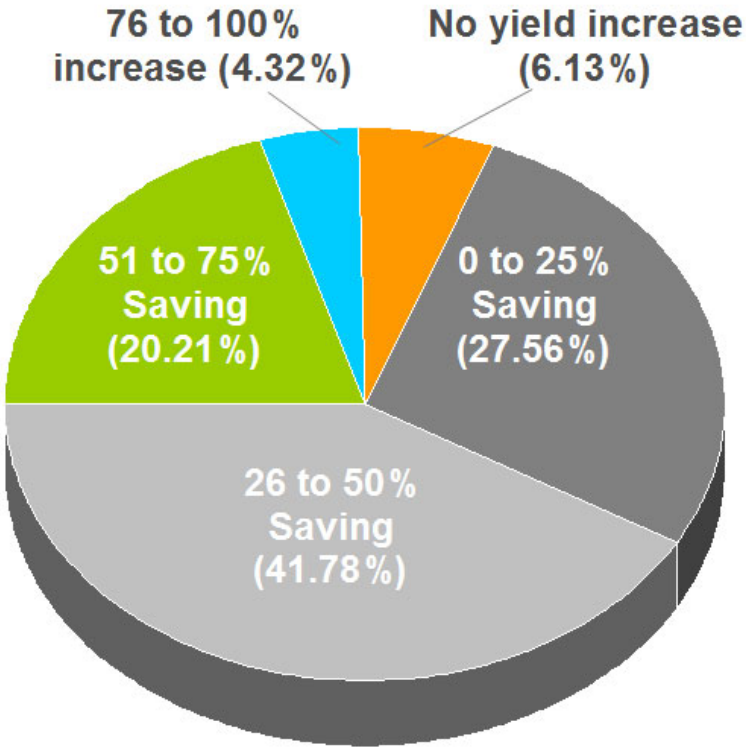
NETAFIM™
GROW MORE WITH LESS

APMIP – IMPACT

WATER SAVING



YIELD INCREASE



NETAFIM™
GROW MORE WITH LESS

AGENDA

WATER SCARCITY

FLOOD VS. DRIP

GOOD PRACTICE: KENYA

GOOD PRACTICE: INDIA

GOOD PRACTICE: CHINA

GOOD PRACTICE: CHILE

SUMMARY

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.

NETAFIM™
GROW MORE WITH LESS

AIM OF THE PROJECT

- 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
- 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

THE PARTNERS IN THIS PROJECT

Farmers, Chinese Government at all levels (village, county, province and Central Government in Beijing), and Netafim

NETAFIM™
GROW MORE WITH LESS

TRAINING AND KNOW-HOW

Extensive agronomic support and training was given to the farmers, covering all aspects related to the project: Agronomy, irrigation scheduling, Fertigation, operation, periodical maintenance and repairs when needed

NETAFIM™
GROW MORE WITH LESS

COMMUNITY

- An increase in farmer's income strengthens the community and slows down migration to the cities, a process accompanied with poverty, increased social unrest and crime rate
- Thousands of local farmers, together with local officials, were very active in the planning and execution of the project
- The entire project was transparent at all levels, from top provincial officials to the last farmer in the field. Information flew freely and clearly and each level had its responsibility and accountability
- Many farmers were involved, in a very democratic way, and their inputs were taken into account all throughout the project

ENVIRONMENTAL RESULTS

- Reducing the amount of water pumped from the Yellow River preserves the river which is experiencing a continuous drop in water level for the past 10 years
- Other provinces downstream, which are going through long periods of draught, get more water
- Underground drinking water pollution is minimized through monitored nutrient applications
- Significant reduction of water used for irrigation leaves more precious water to the inhabitants of this harsh desert land

AGENDA

WATER SCARCITY

FLOOD VS. DRIP

GOOD PRACTICE: KENYA

GOOD PRACTICE: INDIA

GOOD PRACTICE: CHINA

GOOD PRACTICE: CHILE

SUMMARY

FDS™ IN CHILE

- Aim of the project: Help small farmers in remote areas to grow vegetables for their own consumption
- 300 systems were installed, 500 m² each. Another 100 by the end of 2010
- Most of the installations in La Serena region, 500 km north of Santiago
- Target: reaching 3000 families in remote arid farming areas in Chile.

NETAFIM™
GROW MORE WITH LESS

PARTNERS

- The government, through INDAP - National Institute for Agriculture Development, is covering full cost of the system to the farmer
- The sale is done through local irrigation dealers who are involved with the installation
- Netafim team, together with local agronomists, run training sessions with local farmers. Topics include seed varieties, Fertigation™ and nutrigation, installation and maintenance, irrigation scheduling, marketing and logistics. Women take part in the training

FDS™ in Chile

NETAFIM™
GROW MORE WITH LESS

AGENDA

WATER SCARCITY

FLOOD VS. DRIP

GOOD PRACTICE: KENYA

GOOD PRACTICE: INDIA

GOOD PRACTICE: CHINA

GOOD PRACTICE: CHILE

SUMMARY

SUMMARY

- Drip Irrigation saves water!
  - Saving water in agriculture - more water for domestic use
  - Environmental benefits
- More yield, better crops
- Shift from subsistence to commercial agriculture
- Capacity building through training and know-how transfer
- Partnerships bear fruits: Governments, NGO's, Private sector and farmers

EVERY DROP COUNTS

Alexandra Boulat

THANK YOU

NETAFIM™
GROW MORE WITH LESS