

# AT THE HEART OF THE FOOD, WATER AND LAND NEXUS

NETAFIM SUSTAINABILITY REPORT 2013



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## MESSAGE FROM OUR CEO

### Sustainability: The key to our future



Ran Maidan  
President  
& Chief Executive Officer  
Netafim

For many years, we have promoted our sustainable drip irrigation solutions under the heading Grow More with Less. However, our deepening experience and involvement in global sustainable development policy, particularly our work with the UN Global Compact and CEO Water Mandate, has taught us that drip irrigation has a much wider role to play.

Drip irrigation is one of the few solutions whose core proposition addresses three global sustainability challenges – food security, water conservation, and arable land optimization. Operating at the meeting point, or nexus, of these challenges, drip impacts on our society and our planet by increasing crop yields while using less water with the same amount of land. That's why our overarching mission and strategy of advancing mass adoption of drip irrigation by focusing on basic commodity food crops is our most critical future objective.

Sustainability has been part of Netafim's essence since our establishment 50 years ago, and also is the key to our future. In recognition of our contribution to sustainable water management, Netafim was named 2013 Stockholm Industry Water Award (SIWA) Laureate. One of the world's most important water industry awards, SIWA is testimony to our efforts of helping the world grow more with less. By driving mass adoption of drip, which is at the heart of the food, water and land nexus, we are confident of ensuring a sustainable future for growers of all sizes, and for making the world a better place.

The following report highlights some of the progress we've made in contributing to global sustainable agriculture over the past two years. I greatly appreciate your interest in our efforts, and welcome your feedback.

**NETAFIM WAS BORN OUT OF A FARMING TRADITION. OUR COMPANY WAS FOUNDED BY FARMERS FROM AN AGRICULTURAL COMMUNITY. OUR PRODUCTS WERE DEVELOPED TO MEET THE CHALLENGES OF TOUGH SOIL AND A SEVERE LACK OF WATER. SUSTAINABILITY IS PART OF OUR ROOTS.**



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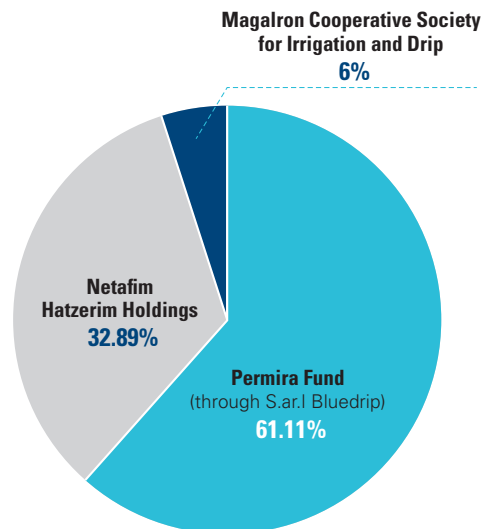
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## OUR COMPANY

Netafim is the global leader in drip irrigation for a sustainable future. Our solutions advance sustainable productivity by enabling growers to cost efficiently produce better and higher yields, while using fewer of the world's limited resources – water, land and energy. Delivering state-of-the-art technology, deep agronomic expertise and capacity-building training, we are dedicated to helping our customers achieve their goals by growing more with less.

With over 3,200 employees, we operate 16 plants in 12 countries, and maintain 27 subsidiaries and representative offices serving over 110 countries. We annually manufacture almost 8 billion meters of dripperlines, enough to circle the world 200 times.

Netafim is privately owned by Permira, a European private equity firm, Kibbutz Hatzerim and Kibbutz Magal, with headquarters in Tel Aviv, Israel.



**27 SUBSIDIARIES**  
and dozens of representative  
offices serving over  
110 countries

**200  
TIMES  
around  
the world**

We annually manufacture almost 8 billion meters of dripperlines, enough to circle the world 200 times.

## OUR SOLUTIONS

### AGRICULTURE

We offer drip irrigation solutions that are suitable for a broad range of crops, and support growers from the planning phase to crop management and harvest.

### LANDSCAPE

Our products incorporate advanced water management practices and technologies for enhanced landscape irrigation, providing the basis for water conservation and recycling solutions while improving city and residential landscape planning.

### GREENHOUSES

Our greenhouse specialists offer comprehensive solutions, from planning and greenhouse construction to after-sale agronomic support.

### MINING

Our drip irrigation solutions for the extractive industries ensure uniform coverage, minimal clogging and optimal metal recovery in leaching processes for mining applications.

# OUR MISSION, VISION, VALUES



## OUR VISION

As the world's leading irrigation company, we will drive mass adoption of drip irrigation to fight scarcity of water, land and food.

## OUR MISSION

We will make drip the irrigation solution of choice worldwide by increasing awareness and delivering comprehensive solutions that are reliable, simple and affordable. We will provide our customers with world-class support to ensure outstanding results. Leveraging our global leadership position, high-quality offering and pioneering spirit, our team commits its agronomic know-how, technological expertise and deep passion to enhance the well-being of our customers.



## OUR VALUES

- **Netafim spirit:** Netafim continues to maintain a unique spirit of mutual cooperation, dedication, loyalty and support for our employees and clients.
- **Knowledge sharing:** We share the knowledge, experience and innovative breakthroughs accumulated over five decades. Our familiarity with diverse cultures and growing methods, together with our presence in multiple countries, create an optimal infrastructure for continuous growth and development.
- **Quality commitment:** Netafim is committed to the highest standards of performance, efficiency and quality, as well as to uncompromising service and dedication to our clients.
- **Continuous learning:** Our creativity, curiosity, desire for knowledge, and openness to new ideas enable us to change and enhance the drip irrigation market. We implement a learning culture to help transform new ideas into practical solutions. This is reflected by our continuous training programs and professional courses for employees, as well as our willingness to acquire knowledge from clients, suppliers and colleagues.
- **Environmental protection and quality of life:** We are committed to developing water-saving methods and systems. We are full partners in promoting and increasing global food production for hungry populations. We take part in global efforts to protect the environment.

# FORMULATING OUR SUSTAINABILITY STRATEGY

As a company whose core product contributes to more efficient use of the world's resources and improved livelihood of farmers, we have made our greatest contribution to global sustainable development by advancing the uptake of drip irrigation. We have achieved considerable success, and are renowned as the drip irrigation pioneer.

At the beginning of our journey, we became involved with drip because we had no other choice. We established our community in the middle of Israel's Negev desert, and in order to survive, we had to find a way to make the desert bloom. Drip irrigation was our solution. Now that we've shared this solution with farmers in over 110 countries, our contribution to global sustainable agriculture is indisputable.

In doing so, we have grown as a business, employing over 3,000 people and maintaining a network of 2,500 dealers. Our understanding of our role in sustainable development has evolved. We now see that there are many ways to advance the uptake of drip irrigation. There are several global, regional, national and commercial issues that affect the uptake of drip irrigation beyond the individual desires of farmers worldwide. Rather than being just about water, sustainable development is about the role of water in the complex food-water-land ecosystem. It is also about the way we operate as a responsible business. We must ensure that all of our internal operations are governed by responsible business practices.

As a result, during the past year we engaged with internal and external stakeholders to identify those areas that most impact our business. Using their feedback, we have created a sustainability strategy, including a balanced set of objectives to guide us in all our endeavors, which will carry us through 2020. Thus far, we have created the framework and broad directional objectives. In the coming year, we will work to create measurable and specific quantitative targets in each area.



## NETAFIM SUSTAINABILITY STRATEGY 2020

### Make drip irrigation the accessible solution of choice for irrigated crops all over the world

#### Help our customers achieve sustainable productivity

##### Technology and innovation

Deliver affordable technology to enable mass adoption of drip irrigation

##### Agri-tech partnerships

Engage in global partnerships to advance technology uptake and adaptation to local needs

##### Smallholder solutions

Increase reach to smallholder farmers with tailored solutions

#### Increase awareness of the benefits of drip irrigation and access to drip around the world

##### Access and education

Raise awareness and educate farmers in the use of drip irrigation

##### Policy support

Maintain active involvement in the UN and other forums to advance sustainable productivity policy

##### Private-sector collaboration

Collaborate with major private-sector companies to drive sustainable productivity through their supply chain

#### Conduct our business ethically, responsibly and transparently

##### Employee engagement

Ensure employee engagement in our sustainability goals and ethical behavior

##### Lean supply chain

Reduce our direct environmental impacts, and contribute to global efforts to mitigate climate change

##### End-of-life impact management

Reduce our indirect environmental impacts through end-of-life dripperline recycling



## DEFINING OUR STAKEHOLDERS

Stakeholders are individuals or groups who are affected by and influence our business operations. Our stakeholder consultations have influenced the development of our sustainability strategy and our most important sustainability issues.

PRIMARY STAKEHOLDER INTERACTIONS	CUSTOMERS	EMPLOYEES	DISTRIBUTORS, PARTNERS AND SUPPLIERS	POLICY MAKERS AND INFLUENCERS
<b>WHO</b>	Farmers, growers and irrigation managers are at the heart of our business.	Our employees are an inseparable part of our success and the source of our innovative spirit.	Our global network of distributors, suppliers and R&D partners help bring our technology to customers.	Those who determine and influence agricultural policy play a big role in determining agricultural sustainability.
<b>HOW</b>	Our ongoing dialogue includes customer meetings, conferences, workshops, training and education programs, and myriad field trials.	We engage with our employees through meetings, performance discussions, and internal communications both offline and online.	Our interaction with our distributors, suppliers and partners takes place daily in the course of our global business.	We engage with policy makers and diverse associations at a global and local level to influence sustainable agriculture policy decisions.
<b>WHAT</b>	Among the key interests of our customers are resource efficiency, crop yield and quality, great service, dripperline recycling, and innovative solutions for sustainable productivity.	Our employees seek professional development, fair compensation and benefits, a safe and healthy workplace, and meaningful work.	Our distributors, suppliers and partners seek collaborative long-term relationships and fair and honest interactions.	Policy makers and influential organizations seek reliable information to support informed decision making, as well as our commitment to transparent and ethical behavior.

Other stakeholders include our owner-shareholders, from whom we take strategic direction. We formally report our performance to shareholders. We also engage with a diverse range of social and environmental organizations, including local communities in the countries where we operate, that support the needs of different groups throughout our value chain.

In line with the development of our sustainability strategy and in preparation for this report, we conducted for the first time a structured stakeholder engagement process with global sustainability experts and local stakeholders in Israel.

# OUR MAJOR SUSTAINABILITY IMPACTS



In developing our strategy, we considered feedback from internal and external stakeholders. Our Executive Management Team and Sustainability Steering Team analyzed the interests and issues raised by our stakeholders and prioritized them, along with an assessment of their impact on our business in the coming years.

We aligned our priority issues with the material aspects defined by the Global Reporting Initiative G4 framework. The result is a set of priority topics that provide the main focus for the content of this report.

These impacts and topics are discussed throughout this report. The GRI Content Index at the end of this report can be used to locate specific indicators. We also provide cross reference tables for the UN Global Compact and the CEO Water Mandate reporting requirements.

## PRIORITY IMPACTS

### Mass adoption of drip irrigation

Indirect economic impacts: G4-EC8

### Material use and recycling

Materials: G4-EN1

Products and services: G4-EN28

### Sustainable productivity

Indirect economic impacts: G4-EC8

### Water conservation

Water: G4-EN8

### Enhancing customer capabilities

Product and service labeling: G4-PR5

### Employee performance

Employee practices: G4-LA1

Health and safety: G4-LA6

Training and education: G4-LA10

### Advancing public policy

Indirect economic impacts: G4-EC8

Public policy: G4-SO6

## EXPERT STAKEHOLDER PERSPECTIVES



In preparation for this report, we consulted with four leading global stakeholder experts about sustainable agriculture, the food-water-land nexus, and Netafim's overall role as a business in society.

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### CARLO GALLI

Technical and Strategy Advisor, Water Resources, Corporate Operations, Nestlé

### GAVIN POWER

Deputy Director, United Nations Global Compact (UNGC)

### ALEJANDRO LITOVSKY

Founder & CEO, Earth Security Initiative

### PASQUALE STEDUTO

Deputy Regional Representative for the Near East and North Africa, FAO

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We found many similarities in the feedback provided by each of these experts.

The key points shared by all include:

- Access to water and sanitation are primary necessities for a sustainable future. Water scarcity is a critical issue for sustainable development, but addressing water conservation must be part of a broader social, environmental and economic ecosystem that includes the way we manage policy and other resources across the globe.
- As a leader in sustainable technology, Netafim should continue to take an active role in influencing public policy to adopt climate-smart solutions. In fact, Netafim could intensify efforts in this direction.
- Smallholders are the backbone of global agriculture, and providing this large group with equal access to technology will make a substantial difference.
- Creative solutions are necessary, and technology is just one part of their development. Entire support systems, such as infrastructure, financing and education, are necessary in order to adopt new technologies.

## STAKEHOLDER ROUNDTABLE DIALOGUE



We conducted for the first time a formal roundtable stakeholder discussion in early 2014. The aim was to hear directly from stakeholder groups in Israel their views about our impact on local society and the environment, as well as their expectations of Netafim as an Israeli company.

Representatives of the public sector, community organizations, local businesses and environmental groups participated in the dialogue. Members of our Executive Management team also attended the meeting to hear the discussions directly with no filters. At the meeting, we asked participants to share their thoughts about sustainability issues that are our highest priority. We were overwhelmed by the dialogue's richness and the value of the ideas and suggestions made by our stakeholders. Although much of the feedback was related to activities that Netafim already pursues (and are mentioned in this report), there were a number of new insights that our management has noted. Some of these include:

- **Involvement in public policy:** Stakeholders expect Netafim to be more involved in public policy development, by leveraging our extensive expertise and experience to influence local governmental policy water conservation, sustainable agriculture, environmental stewardship and other areas.
- **Innovation:** Given Netafim's track record as an innovator, stakeholders expect Netafim to go beyond innovation in formulating our development strategy. They believe we should become an innovation accelerator in the market, especially with regard to water technologies. They expect Netafim to create partnerships for innovation, as well as help support their development.
- **Great employer:** As a global company with local roots, our stakeholders expect us to ensure we remain true to our values, and engage employees in our mission. In this realm, we should maintain a positive workplace in which everyone has a say.
- **Water conservation:** As a company most often associated with alleviating water stress, stakeholders want us to do more in water conservation education, as well as increase awareness for water technologies and water scarcity issues in Israel and abroad.
- **Community development:** Stakeholders believe Netafim can make a greater contribution to the development of local community green lifestyles, especially in peripheral areas. This might include supporting community activities such as community gardens, local organic farming, municipal green initiatives, and urban agriculture.

## STOCKHOLM INDUSTRY WATER AWARD (SIWA)

“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.”

SIWA SELECTION COMMITTEE, SIWA AWARD ANNOUNCEMENT



In 2013, Netafim was awarded the prestigious Stockholm Industry Water Award (SIWA) in honor of our contribution to sustainable water management. The award was granted by the Stockholm International Water Institute (SIWI) in collaboration with the Royal Swedish Academy of Engineering Sciences and the World Business Council for Sustainable Development. SIWA recognizes improved performance in production processes, new products and management, as well as innovative approaches in water and wastewater technologies, which together help improve the world's water situation.



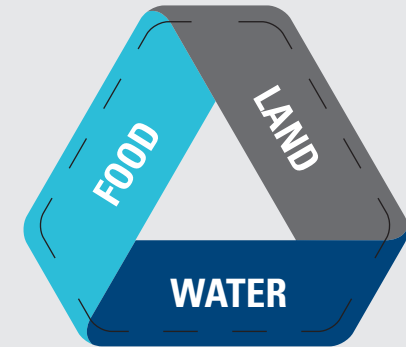
## OUR IMPACT AT THE HEART OF THE NEXUS

Until now, the global community has addressed food, water and land security as stand-alone challenges. However, our perceptions have changed, and we recognize that it is critical to tackle these three mega-issues in a holistic fashion and at their nexus.

**Food security** is defined as the "availability of and access to sufficient, safe and nutritious food to meet the dietary needs and food preferences for an active and healthy life." Adequate food has also been defined as a human right. But in today's world, more than 12% of the global population is not food secure. Millions of people do not have regular access to nutritious food, and thousands die each day as a result. The UN's Food and Agriculture Organization (FAO) 2013 report states that 842 million people were unable to meet their dietary energy requirements. Food is also necessary to nourish the over one billion people worldwide who are engaged in the production of food. Food production requires arable land for agriculture, and is by far the largest consumer of fresh water globally. The direct connection between food and land use is clear, and the limited availability of fertile, arable land due to climate change is reflected in the rising prices of basic commodity food stocks around the world. In addition, the agricultural food chain is highly inefficient, with almost 50% of global food production going to waste. Threats connected to food security are multiple and include water scarcity, arable land constraints, inefficient food production and supply, and unequal access to nutritious food. These interrelated issues affect food security, and limit overall cumulative outcomes at the food-water-land nexus.

**Water security** is defined as "access to safe drinking water and sanitation." The UN defined access to water as a human right in 2010. In addition, agriculture and food production, fuel and energy generation, and maintenance of the natural ecosystem rely on water availability. Threats to water availability include climate change and drought acceleration, biodiversity changes, pollution, and inefficient or non-essential consumption. Protection of water sources, efficient water use, and elimination of water pollution sources are critical elements of the food-water-land nexus.

**Land security** is defined as "availability of and access to arable land to support agricultural requirements for food and energy production." Arable land availability throughout the world continues to decrease. Threats to arable land include water scarcity and desertification. In addition, climate and natural biodiversity changes are altering the nature of arable land and the conditions in which agriculture can thrive. While new climatic conditions typically have a negative effect on land arability, they can actually increase land arability depending on local conditions. Going forward, it will be critical to protect arable land sources, identify opportunities for increased land arability, and ensure ongoing suitability of arable land in order to increase agricultural production. Energy - and water-efficient agricultural practices, as well as adapting agricultural methods to changing climatic conditions, are critical to supporting food security and alleviating water scarcity in the future.



### FOOD SECURITY

Availability and access to sufficient, safe and nutritious food to meet the dietary needs and food preferences for an active and healthy life.



### WATER SECURITY

Access to safe drinking water and sanitation, and water for agriculture and food production, fuel and energy generation, and the maintenance of the natural ecosystem.



### LAND SECURITY

Availability of and access to arable land to support agricultural requirements for food and energy production.



## POST-2015 SUSTAINABLE DEVELOPMENT OPPORTUNITY

The food-water-land nexus is a problem, and an opportunity, for humanity. It requires the attention of global, regional and national policy makers, the collaboration of industry and civil society, and individual efforts by all global citizens. There is no single solution. Each of the areas is interrelated, and requires an integrated approach rather than a narrow focus on one of the elements of the nexus. Development of the United Nations Post-2015 Sustainable Development Agenda was launched under the theme the Future We Want at the Rio+20 United Nations Conference on Sustainable Development in 2012. The agenda addresses these overarching needs for our global population, which is likely to exceed 9 billion by 2050.

*"We recognize that poverty eradication, changing unsustainable and promoting sustainable patterns of consumption and production, and protecting and managing the natural resource base of economic and social development are the overarching objectives of and essential requirements for sustainable development."*

Future We Want, Outcome Document, UN, 2012



## DRIP IRRIGATION AT THE HEART OF THE NEXUS

Drip irrigation has long ceased being solely about saving water, and now is one of the key tools operating at the food-water-land nexus. Through our work around the globe, we are involved in irrigation projects that enhance sustainable productivity – producing higher food output, while using less water with the same amount of arable land. And its impact can be felt in local, national and regional economies, injecting economic prosperity into areas that have helplessly struggled to prosper till now.

With drip irrigation positioned at the heart of the food-water-land nexus, our mission is to promote mass adoption of drip worldwide. To bring this to reality, we are working across a number of avenues. We are developing new technologies to improve irrigation performance. We are engaging with regulators and policy makers to raise awareness and drive action. We are working with large food manufacturers to drive drip right through their supply chain. And we are directly supporting hundreds of thousands of farmers in their daily efforts to improve their livelihood.

In this report, we will summarize how we operate at the food-water-land nexus, with a focus on our achievements over the past two years.

## DRIP IRRIGATION – HOW IT WORKS



Drip irrigation is the slow, even application of low-pressure water to soil and plants, enabling the precise irrigation of the plant's roots, and ensuring that water uptake is effectively supporting their growth and development. Drip systems are also used for the application of fertilizers and nutrients directly to the plant's roots, resulting in optimal utilization and preventing environmental impact of excess fertilizer use such as soil and groundwater contamination.

Drip is based on a system of plastic tubing with embedded water emitters placed throughout, enabling the release of water at prescribed rates directly to the plant's roots.

The technology enables precise planning of irrigation scheduling according to crop needs, soil type, and climatic and weather conditions. Best practices in drip irrigation are achieved by applying technological solutions such as automation, as well as relying on agronomic support.

Due to the precise application and maximum utilization of water and chemicals by the plant, drip irrigation leads to higher yields, while using fewer resources. Drip irrigation also offers many environmental benefits:

- Preventing soil erosion and excessive run-off by applying water in a manner that suits the soil's penetration abilities.



- Conserving water.
- Preventing excess fertilizer and nutrient use that may result in soil and groundwater contamination.
- Reducing methane gas emissions produced by some crops, such as rice, when flood irrigation is used.
- Reducing energy use, since less energy is needed to irrigate with drip compared to irrigation methods that require water pumping.

**Surface irrigation:** The simplest method of drip irrigation, surface irrigation requires the placement of dripperlines on the surface of the agricultural field at a defined distance from the crop's base. Typically, surface irrigation is preferable to subsurface irrigation, since it is less expensive and there are areas where subsurface penetration is problematic. Surface irrigation is usually implemented for tree crops and multi-seasonal row crops.

**Subsurface irrigation:** This is more efficient than surface irrigation, since the dripperline is placed below the surface of the soil, thereby better targeting the plant's roots. Typically, subsurface drip irrigation offers additional opportunities for efficient irrigation, automates the irrigation process, and enables the use of reclaimed water or recycled wastewater. Subsurface drip irrigation can eliminate anaerobic decomposition of plant materials and reduces methane gas production, a greenhouse gas that accelerates global warming.



## MASS ADOPTION OF DRIP IRRIGATION

Mass adoption of drip (MAD) across all available cultivable land is one of our highest priorities for two reasons. First, with drip irrigation at the heart of the food-water-land nexus, it has great potential to contribute to sustainable development. Second, drip irrigation is our core business, and by advancing MAD, we secure our company's sustainable future. By leveraging every opportunity to advance drip irrigation for all crops in all geographies, we support climate-smart, shared-value sustainable solutions for the world at large.

Drip irrigation has expanded over the years to support the cultivation of high-value cash crops and increase the profitability of farmers, making an initial investment in advanced drip systems commercially viable. This has been the case for citrus, grapes, other fruits, olives, tomatoes and many other crops, which represent a small percentage of the world's overall agricultural production. Now with our accumulated experience and know-how in irrigation technologies, we are striving to make drip irrigation accessible and viable for commodity crops, which help feed the world. By achieving mass adoption, drip can revolutionize sustainable productivity.

**MASS ADOPTION OF DRIP IRRIGATION INVOLVES EXPANDING ITS AFFORDABLE APPLICATION TO ALL MAJOR COMMODITY CROPS, WHILE IMPROVING ACCESS FOR SMALLHOLDERS, ESPECIALLY IN EMERGING ECONOMIES, THROUGH EDUCATION, FINANCIAL SUPPORT AND POLICY DEVELOPMENT.**

### DRIP IRRIGATION BENEFITS

- **Increases productivity:** delivers up to 50% higher crop yield with fewer resources.
- **Covers all surroundings:** can be designed for use in all types of terrain and soil conditions.
- **Saves water:** uses 30-50% less water than conventional watering methods such as sprinklers or flood irrigation, and enables utilization of treated wastewater.
- **Protects the environment:** prevents soil erosion, nutrient run-off, and groundwater contamination by chemicals and fertilizers, and reduces production of methane gas.
- **Reduces weeds:** reduces weed growth because areas between the plants are not irrigated.

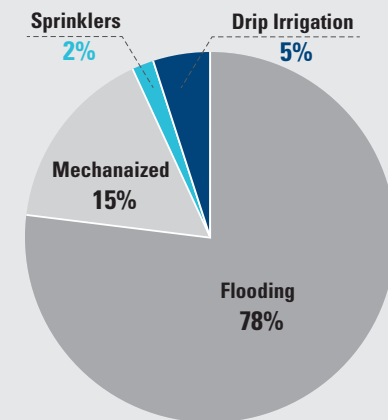
### DRIP IRRIGATION LANDSCAPE

At Netafim, we directly advance drip irrigation in two main ways:

- Improve drip's applicability for commodity crops that have not been drip irrigated till now primarily due to high costs and technological limitations. We do this by driving innovation in drip to reach unprecedented levels of performance, making commodity crop drip irrigation affordable, while contributing to expanding knowledge and experience.
- Increase the accessibility of drip irrigation to smallholders in cases where high cost, low awareness and limited capability have been barriers. We do this by developing special systems for smallholders that are matched to their needs, and by providing education and training for their use.

Our entire organization is behind this effort. We invest about 1% of our turnover in research and development, and employ around 50 full-time professional agronomists and technicians.

- Only 17% of all cultivated areas are irrigated.
- Only 5% of irrigated land uses drip irrigation.
- Countries that lead the way in drip irrigation are Israel, India and Spain.



## THINK TANK FOR MASS ADOPTION

In 2013, we created a mass adoption of drip irrigation think tank to address the challenges and opportunities of MAD, and to refocus our entire organization in developing practical solutions. We launched the process by holding a workshop with 37 Netafim managers, including development scientists, engineers, technology experts, and marketers from throughout the world. During the workshop, we set up four teams to focus on developing innovative and effective solutions to overcome barriers to mass adoption. In addition, several external stakeholders, including farmers, dealers, renowned agronomists and equipment manufacturers, shared with us their expectations and needs. The think tank enabled us to better appreciate the challenges of mass adoption, and to formulate several ideas to help advance our mission, and we expect to report tangible outcomes in future reports.

## NEW TECHNOLOGIES FOR MASS ADOPTION

### NANO-IRRIGATION FOR EVEN BETTER RESULTS

In 2013, we introduced our breakthrough TurbuNext™ technology, another step toward mass adoption of drip irrigation. TurbuNext is a unique drip irrigation system enabling water flow at unprecedented low rates, leading to optimization of water use, while improving the quality and quantity of cultivated crops. TurbuNext, the world's most advanced drip technology, is applicable to all crops, including commodity crops, thereby bringing mass adoption closer to reality.

TurbuNext is the result of decades of experience and focused R&D efforts over the past few years. Before we introduced the technology, reducing irrigation flows to such a low level appeared impossible, since it was assumed that crops require more water than that provided by an ultra-low flow rate. We have proven that that's not true. As the first company to offer a low-flow rate of 0.6 liters per hour, we believed that even greater precision was possible. Nano-irrigation provided the answer, helping us achieve the world's lowest flow rate at 0.4 liters per hour, while resolving critical issues such as clogging resistance. Now farmers can be confident about using water from all sources, including clean wastewater, in the irrigation process.

Ultra-low-flow irrigation optimizes water distribution at near-100% levels, meaning that virtually no water is wasted in the irrigation process. Drip's goal is to water the plant, not the soil. Any precious drop of water that goes to the soil and not the plant is inefficient for farmers and wastes water. With TurbuNext, this problem is eliminated.

*"TurbuNext technology, with flow rates of below 0.4 liters per hour, is a true revolution and a major technological breakthrough. Today, Netafim applies TurbuNext technology in all its drippers and dripperlines, enabling drip irrigation at any flow to be more efficient. Netafim has succeeded in doing what was previously considered impossible – lowering the flow to nano-irrigation levels."*

Natan Barak, Marketing Director

### AUTOMATION FOR SMARTER IRRIGATION

Another technological advantage we offer for driving MAD is crop technology management (CMT), which makes smart agriculture even smarter, and gives farmers greater control over nearly every aspect of their agricultural systems. In early 2014, we launched an enhanced version of the uManage™ crop management system, adding new functionalities and making automated crop management even simpler, more accessible and more reliable.

uManage now has plug-and-play capabilities enabling farmers to install the system and make adjustments according to their specific needs. uManage automatically identifies the array of multi-functional in-field sensors, and requires no special technical knowledge or modification to deliver results. Information collected by the sensors is transmitted wirelessly to wherever the farmer is located – at the office, at home, in a café, or on the farm. Farmers can access real-time data, including charts and graphs, about their crops and soil, adjust water or crop nutrient flow, and transmit these decisions remotely back to the system in the field.

*"The main role of CMT is to facilitate farming for growers by using smart technologies that provide them with the confidence to make the right choices for their crops. This is especially valuable with subsurface irrigation, since the irrigation and Nutrigration™ processes take place underground and cannot be seen."*

Lior Doron, CMT Director

## COTTON IN THE US: Four-fold yield improvement

In Texas, we demonstrated that drip irrigation is practical, affordable and profitable for cotton farmers. Typically, cotton farmers have been reluctant to invest in drip irrigation due to the required high initial investment. Based on a trial at a 4,000-acre farm in Texas owned by John Wilde, our drip solutions delivered up to four times the yield from lint and cottonseed compared to furrow irrigation.



"Water is our limiting factor. I live near the city of San Angelo. So when my urban neighbors see a furrow filled with irrigation water, it's hard for me to convince them we're not being wasteful when the city was potentially going to run out of drinking water within 20 months. Now with drip irrigation, we plant our cotton on top of the dripperline, and use GPS technology to position it 10-to-12 inches below the root. You can start watering as soon as you are finished planting. With drip irrigation, you can effectively use every drop of water."

John Wilde, Cotton Farmer, Texas

Seven years ago, John began implementation of drip practices on his farm, which includes 350 hectares of cotton, as well as wheat and sorghum. After successfully installing a drip system covering 15 hectares, John expanded drip across his entire farm, including the cotton crop. In addition to improving yields, drip reduced water loss due to evaporation to less than 10%. This means that even during severe droughts, which are normal in the Texas climate, John can maintain cotton production and save money while doing so.

**Less  
than  
10%  
water  
loss**

"Cotton is one of the few commodity or field crops in the US that have adopted drip for substantial acreage, around 15% of our total cotton cultivation. Each year, up to around 16,000 hectares of inefficient irrigation is replaced with drip irrigation, and the global potential remains huge. A perceived barrier for farmers is the initial cost of drip irrigation systems. However, when the system is used well, the payback is substantial, with typically up to 30% greater yield with the same water and other resources. That's why a critical part of our role is helping farmers to adapt drip for the best efficiencies."

Michael Dowgert, Sales Support Director

### WORLD COTTON PRODUCTION



- 26 million tons produced in 90 countries.
- China, US, India, Pakistan, Uzbekistan and West Africa account for over 75% of global production.
- 73% of the global cotton harvest uses some form of irrigation.

## CORN IN MEXICO: 27% yield increase

Another commodity crop that grows much more efficiently with drip irrigation is corn, which is the third-most planted crop worldwide, and the most widely used of all cereal food crops. According to estimates by the UN Food and Agriculture Organization (FAO), the demand for corn for human and animal consumption will increase by nearly 300 million tons by 2030. Since corn is grown in several emerging economies, improving corn production efficiency can improve economic and social development in many countries. The need for mass adoption of drip irrigation for corn is clear. Corn is at the heart of the food-water-land nexus. The success story below underscores the role drip can play with corn in Mexico, where 820 million bushels, representing 2.4% of total world production, is grown.

Average corn yields in Mexico over the past few years have doubled due to drip irrigation. Growers can now harvest twice a year, while reducing water by 30-50% on average. Through our local partnerships, the Mexican state of Sinaloa now leads the way in the adoption of

drip irrigation for corn in the country, and has become a learning center for growers from other regions.

Daniel Ayon, a grower from Culiacan, Sinaloa, installed a drip irrigation system on his 75-hectare corn plot in 2012. He was hoping to increase revenue by planting corn next to vegetables growing across the rest of his plot. We offered a solution best suited for corn with low-flow capabilities, a wide filtration area ensuring optimal performance, mechanisms for preventing sediment that can contaminate drippers, improved clogging resistance, and injection molding ensuring uniform dripper production.

In 2013, Daniel reported a 27% increase in yield and a 66% decrease in water consumption compared with flood irrigation. Furthermore, the quality of Daniel's yield was better, enabling him to sell his produce in the regional market at an 11% higher price. As a result, he increased not only his income, but also his ability to invest in additional agricultural initiatives.



Daniel Ayon, Sinaloa, Mexico - Furrow vs. Drip Irrigated Corn, 2012-2013

Parameter	Furrow Irrigation	Drip Irrigation (Netafim's Streamline™)	Change
Average annual yield (tons/ha)	11	14	27%
Water consumption (m <sup>3</sup> /ton of corn)	1,100	379	-66%
Average price of yield (\$/ton)	248	275	11%



**66% decrease in water**

**MAD INVOLVES EXPANDING THE AFFORDABLE APPLICATION OF DRIP IRRIGATION TO ALL MAJOR COMMODITY CROPS, AND IMPROVING SMALLHOLDER ACCESS TO DRIP, ESPECIALLY IN EMERGING ECONOMIES.**

## INDIA: Drip Irrigation Solutions for Rice

One way to produce more food to meet the world's growing population is by increasing the production of rice – a staple food for nearly half of the world's population. Over 95% of the crop is grown by smallholders in plots up to 2 hectares in size. Conventional rice farming, however, requires hard physical labor and long workdays. With the average rice farmer in Asia over 60, and younger generations unwilling to take on this labor-intensive work, great efforts are being made to develop new cultivation methods that are less demanding and more rewarding.

Another obstacle to increasing rice production is land availability. Rice paddies require absolute-level fields of heavy soils. Typically, rice is grown during the rainy season, when water availability is at its peak. To grow more rice, however, we must make use of lighter soils and less-flat areas either all year round, including the dry season, or in drier climates.

“Rice is one of the world's most important crops, both in terms of its role as a basic food and as a source of income for millions of smallholders around the world. It is one of the only staple food crops grown in small plots. Using drip irrigation for rice can have a vast environmental, social and economic impact.”

Eli Vered, R&D and Field Crops Manager

### ADAPTING DRIP FOR RICE

We conducted research and development in collaboration with governments, universities and institutions that subsidize farmers in order to develop a cultivation method for rice. In 2007, we began to develop a drip irrigation system that meets the needs of rice farmers. The work entailed the following:

1. Determining crop coefficients, that is, the amount of water the crop needs at each developmental stage.
2. Developing a fertilization methodology.
3. Finding rice varieties that respond well to drip irrigation; these varieties must have suitable physiological properties and a root system, while producing high yields.
4. Carrying out weed control.
5. Creating an affordable irrigation system.



### MINIMIZING ENVIRONMENTAL IMPACT

While developing our rice cultivation methodology, we also took into consideration the effect of drip on the environment. Paddy rice is one of the most excessive agricultural polluters, both as a producer of greenhouse gas (methane) and as a producer of nitrogen and pesticide in water sources. Research institutes in Italy, China and India have found that drip irrigation of rice reduces these effects to a minimal level compared to any other field crop.

## ACCOMMODATING SMALLHOLDERS

Advanced irrigation methods usually require a certain level of water pressure that does not allow for their use in rural areas, where the supply of electricity and fuel present logistic and economic challenges. Our Family Drip System™ (FDS™) has been developed for small family farms working on solar pumps. Since they require water pressure of just 3-4 meters, the accompanying pumps and solar panels are small and affordable.

Our new rice cultivation method includes direct sowing of rice in the soil, which eliminates the need for preparing and manually planting seedlings in a flooded field. It also includes several crops for rotation, providing the farmer with a source of income all year round.

## RAISING AWARENESS OF DRIP FOR RICE

In collaboration with the Water Technology Centre at Tamil Nadu Agricultural University in Coimbatore, Netafim India organized a first-ever three day International Research Conference on Drip Fertigation in Rice in 2013. The conference was attended by over 100 local and international experts, academics and agricultural companies. At the conference, participants were updated on new research and results of feasibility studies of rice fertigation in different climates with different varieties. The participants visited the rice paddy of Tamil Nadu University, as well as other farms using drip irrigation in the area, to gain an appreciation of the benefits of drip irrigation in practice.

At the conference, we were encouraged by the willingness of participants to consider new technologies, and to modernize the way agriculture works in a traditional setting such as India. We experienced firsthand the huge potential, and understood some of the possibilities that can be moved forward with the right partners. One outcome to help increase awareness, for example, was the plan to establish a village irrigation program that will demonstrate the benefits of drip irrigation in rice cultivation. One hundred farmers in a local village have joined the initiative, and the rice plots are now ready to be drip irrigated.



“For mass adoption of drip irrigation to be effective, we need to keep raising awareness and understanding. Drip irrigation may be a tried and tested technology, but there is still some reluctance to give up traditional methods. Not only this – drip in rice offers different possibilities with different rice varieties. An important part of our role is to inform the smallholder farming population. Our first rice conference offered a way to build the collective knowledge about drip fertigation. If we have helped just a few farmers make the transition, then it was definitely worthwhile.”

Dubi Raz, Agronomy Director, Emerging Markets Division

## LOANS IN INDIA: \$4.5 million smallholder financing

We can significantly increase access to drip irrigation by helping smallholders finance their initial investment in drip irrigation systems, and this is what we decided to do in India. Netafim India placed drip irrigation within the reach of thousands of farmers by establishing the Netafim Agricultural Financing Agency (NAFA) in 2013.

NAFA is a non-banking financial company (NBFC). The company is majority-owned by Netafim (51%) with two partners – Atmaram Properties Pvt. Ltd., an Indian real estate group, and Granite Hill India Opportunities Fund, a private equity fund – that bring financial experience and knowledge to the group. A strategic partner of Netafim India, NAFA complements its activities by providing financing solutions for stakeholders in the drip irrigation value chain in order to help bridge the existing financing gap. NAFA helps broaden Netafim India's customer base by issuing loans to new smallholder customers who otherwise could not afford drip irrigation, and cannot secure loans or financing support by other means.

One of NAFA's major advantages is rapid loan approval. Due to fast processing, farmers can obtain funds within 15 days, meaning that time-sensitive, crop-planting decisions can be made on time. Similarly, NAFA does not require property as collateral, and expects payback only after farmers have earned money from sales of their produce. In this way, NAFA makes it much easier for farmers to circumvent existing bureaucracy and burdensome collateral demands within the current financing structure. Since loans are tied to the purchase of Netafim equipment and built-in support from Netafim's agronomists and technical support staff, NAFA is confident that the benefits of drip irrigation systems will deliver the desired results. Therefore, the NAFA solution is a win-win situation for both Netafim and our local customers.

NAFA currently serves two states in India, Maharashtra and Karnataka. Since its launch in 2013 until May 2014, 2,500 customers have benefited from loans totaling \$4.5 million to fund new drip irrigation systems. In 2014, NAFA will extend services to Tamil Nadu and Madhya Pradesh, expecting to reach over 7,000 farmers.



"Timely and adequate delivery of credit has played an important role in driving adoption of drip irrigation among Indian farmers. NAFA's 'fast, easy and flexible' approach in delivering drip irrigation credit to the Indian farmer will immensely benefit faster adoption of drip irrigation, leading to increased productivity while saving precious natural resources for a sustainable future."

Avijit Majumdar CEO, Netafim Agricultural Financing Agency



## CORN IN ECUADOR: NetaKit™ distribution



Beyond providing assistance with financing, our commitment to advancing drip irrigation includes developing technical solutions that meet the specific needs of farmers. Underscoring this commitment, we developed a unique solution for small plots of up to 1 hectare for customers in Ecuador in 2013.

The Ecuadorian project was based on a collaborative effort with the country's Ministry of Agriculture, Livestock, Aquaculture and Fisheries. The ministry has been developing a multi-year project to implement integrated farming systems with modern, sustainable technologies in the communal lands of the Santa Elena Peninsula to fuel economic development in the region. Drip irrigation was an essential element of these farming systems, since it enables crop cultivation during the dry season, thereby doubling the annual crop cycle from one to two.

Netafim's solution, NetaKit™, is an all-in-one drip irrigation kit for small plots comprised of dripperlines, flexible distribution pipes, and accessories. Easy to transport, install, operate and maintain, NetaKit is a suitable, high-performance solution that meets the needs of farmers in Santa Elena. The government purchased and distributed NetaKit



units to over 900 family farms growing corn, coffee, pepper and watermelon in plots up to 3 hectares in size. The total area covered in the project was 940 hectares. In addition to the NetaKit units, Netafim provided agronomy support and training to our project partners.

**100%** INCREASE  
IN YIELD



**40%** DECREASE IN  
WATER USE

So far, the results of the project have been outstanding. Corn yields have increased by over 100%, while water consumption has decreased by 40%. In financial terms, participating farmers are enjoying a three-fold increase in income; average farming income per capita improved from \$450 to \$1,800 per cycle, with the number of annual cycles having increased from one to 2.5. With 900 farmers involved in the project, it is clearly a huge boost to the region's economic and social well-being.

*"NetaKit is an accessible solution that opens the door to drip irrigation for millions of farmers around the world."*

Dany Feinberg, Irrigation Products Manager



## TAKING CARE OF OUR CUSTOMERS

Since drip is a novel approach for most farmers, especially smallholders, they must make adjustments to their farming methods when adopting the technology. Drip irrigation offers farmers unprecedented opportunities, transforming the way they cultivate their crops. We work with farmers to help them understand how to maximize drip technology. No single solution, however, can be applied throughout the world. Each plot of land maintains a unique set of characteristics including size, vegetation, soil quality, climatic conditions, crop history, and crop future. Many factors determine the way drip irrigation should be applied in order to deliver optimal results under varied circumstances. Therefore, we maintain a full-service network to educate, train and support our customers worldwide. Our objective is to help customers gain maximum benefit from their land and drip systems. This, in turn, leads to increased food productivity, reduced water usage, and enhanced arability, thereby, thereby providing innumerable benefits at the heart of the food-water-land nexus.

In every market, our agronomists and technical experts, together with our extended dealer network, support our customers to enhance their capabilities and quality of life. In this section, we will describe some of the many examples that take place every day in the over-110 countries that we serve.

**WE VIEW OUR DEALERS AS PARTNERS WHO SHARE OUR VALUES, ASPIRATIONS AND PROFESSIONAL APPROACH.**

## PARTNERING WITH OUR DEALERS



**2,500  
DEALERS**  
in over **110**  
countries

Enhancing customer capabilities means getting to know our customers well, understanding their needs, and helping them achieve optimal solutions with drip. While we employ teams of professional service engineers and agronomists serving dozens of countries, we supplement them with an extended sales and service network comprised of more than 2,500 dealers in over 110 countries. We view our dealers as partners who share our values, aspirations and professional approach. In order to enhance our customers' capabilities, we invest great efforts updating our dealers with the latest know-how, technology and means so that they can offer the very best practical customer support.

### SUPPORTING DEALERS IN BRAZIL

Netafim Brazil launched the SuperAction relationship and evaluation program for 25 exclusive local dealers in 2013. The program is designed to enhance our interaction with dealers, and to support their business through the development of targeted action plans, monthly review meetings, and performance evaluation. Feedback is provided from Netafim Brazil to dealers and vice versa. The program also includes a comprehensive training and development agenda, the Universidade Netafim (Netafim University). In 2013, all dealers received in-house training covering agronomic areas, commercial tools, engineering, post-sales, and installation. All dealers are also invited to an annual conference to share experiences and plan for the following year in alignment with Netafim's current strategy.

### SUPPORTING DEALERS IN INDIA

Netafim India conducted 850 days of training for 256 local dealers and their staff in 2013. Our experts provided 1,600 people with a better understanding of drip, technical reviews and field demonstrations. The training builds up the capabilities of our dealers to support customers effectively in the field. In India alone, we and our dealers have connected with over 160,000 customers through more than 2,700 meetings held around the country to increase the awareness of drip and its benefits.

*"Working with our dealer network is essential for us. In a country as large as India, with millions of smallholder farmers, it's imperative to know local areas, understand local conditions, and appreciate the pressures on local farmers, including what they need to consider changing to drip. In India, our dealer network is part of Netafim's extended team, and we work together closely every day. Through this collaboration and our investment in knowledge sharing, we are slowly but surely converting Indian agriculture to drip, and making it more efficient. I believe this has a benefit on not only the local level, but also the national level."*

Avinash Thakur, Head of Marketing and Business Development, Netafim India

## THE PHILIPPINES: Increasing banana production efficiency

Netafim and our partner Netaphils were selected by Del Monte as a system supplier installer for supporting development of new banana plantations to increase banana production efficiency in the Philippines. We trained 100 Del Monte local employees in operating our system, while 25 of them were certified as irrigation supervisors, receiving advanced know-how to further support the successful development of this new initiative.

The new 1,000-hectare banana plantation is located in the Cotabato region on the southern island of Mindanao, one of the poorest parts of the country. The region has suffered political and military conflict for many years, leading to devastation and turmoil for the local population. Agricultural development is one of the keys to reviving the local economy and to bringing quality of life to the local population.



**WATER  
SAVINGS  
OF 2.4 MILLION m<sup>3</sup>**

Netafim has been present in the Mindanao region for 25 years, and almost half of the island's 40,000-hectare banana industry is irrigated – about 60% via sprinklers and 40% via drip. The Philippines is one of the world's leading banana exporters, annually generating \$1.7 billion in banana exports. Our drip irrigation work there supports economic stability and development, and conserves over 2.4 million cubic meters of water annually.

"The entry of multi-national corporations into the Mindanao region and the implementation of sustainable agriculture best practices, including drip irrigation, support economic development in this region, which has been torn with conflict for so many years. Such positive economic development also has another benefit. It provides a more robust social framework that helps maintain the peace agreement between Mindanao and the Philippine government. Economic growth is a great motivator for peace."

Sam Tidhar, Director, Netafim South East Asia




## CROATIA: Energy-efficient greenhouse project



In 2013, Agrokor, the largest food retailer in Croatia, signed an agreement with Netafim to develop an energy-efficient greenhouse project with drip irrigation technology. We designed and constructed a 4.5-hectare greenhouse for Agrokor as part of an integrated closed-loop farming facility that utilizes waste from throughout the farm to create energy that heats water used for heating the greenhouse.

Agrokor's farm has a cowshed with 2,000 cows. Some 50,000 tons of manure and organic waste from Agrokor's farm are diverted to the company's two megawatt biogas energy processing plant. During electricity production, water is used to cool the turbine. The water is heated as it cools the turbine, and is then run off to be used for heating the greenhouse, which grows tomatoes. By using the biogas generated in Agrokor's facility, about 30% less natural gas is used for heating the greenhouse.

In addition, since the energy generated through this process is insufficient to meet the greenhouse's needs during Croatia's cold winters, we designed an energy-efficient boiler that runs on natural gas as a supplementary energy source. The carbon dioxide produced by the gas boiler is routed to the greenhouse and converted to oxygen by natural photosynthesis in the tomato plants, thereby completely offsetting carbon emissions from the energy generated.

 **30%  
LESS  
FERTILIZER**

The greenhouse also saves water by utilizing excess water that is required in order to prevent accumulation of saline in the plant beds. This excess drainage water is treated and reused in the irrigation process, which prevents additional water from having to be withdrawn in order to support tomato growth. This leads to annual savings of 38,000m<sup>3</sup> and 30% less annual fertilizer consumption.

This integrated closed-loop approach has now become a model of choice for Agrokor, which plans to construct up to 15 more biogas plants to meet its energy needs in the coming years.

*"This is a highly strategic project. The use of closed-loop systems offers immeasurable benefits that we have been able to capture in this major project with Agrokor. We are convinced of the re-applicability of this system, and seek new opportunities as we work with customers in different countries."*

Ofer Inbar, Greenhouse Department Manager,  
Turkey, Central Asia and Balkan regions

## VIETNAM: Saving water and labor costs

### ALL ABOUT DRAGON FRUIT

- Its official name is pitaya.
- It's a combination of several cactus species.
- It's super fruit-rich in vitamins, fibers and anti-oxidants.
- It was originally grown to be eaten by royalty and wealthy families.
- It has been grown in Vietnam for over 30 years, and is the country's most popular export fruit, sold in over 30 countries and territories.
- In 2013, its prices reached \$4,500 per ton, and in the US, a single piece of dragon fruit can cost up to \$6.

In 2010, we initiated the first major drip irrigation initiative for dragon fruit worldwide with the support of the World Bank, which provided 30% of the project's financing. Aimed at enhancing the capabilities of independent smallholders in the coastal province of Binh Thuan, the project offers advanced agriculture technology tools, including drip irrigation, as a replacement for traditional furrow or sprinkler methods. Our systems were installed across 300 hectares on 0.5-to-50 hectare plots owned by dozens of smallholders and small companies.



**↑ 10%**  
MORE YIELD AND  
RAPID ROI

The project led to significant benefits, including a 10% improvement in yields, 25% reduction in water and fertilizer usage, 75% reduction in labor costs, and a rapid return on investment (ROI).

"Netafim's drip system saves water and reduces labor and fertilizer costs. In addition, fertilizer uptake is better, which improves crop quality. We also gain uninterrupted irrigation during the dry season. That's not the case with sprinkler or manual irrigation, when we must often wait for the underground water to refill the deep well in order to create a sufficiently large flow rate during the dry season."

Kim Hai, Farmer, Ham Thuan Nam District

### VIETNAM: DOUBLING SUGARCANE YIELD

In another Vietnamese initiative in 2013, we participated in a project for smallholders in Nghe An Province in which we installed a drip system across 11 hectares for four farmers supplying sugarcane to a local factory. The systems were financed by the factory, and we supervised installation and trained all users. In almost no time, Vietnamese growers doubled their yield and increased their annual income by an average of \$1,700 per grower. The initiative is being expanded to 100 hectares.

## RECOGNIZING CUSTOMER EXCELLENCE

Each year at our Global Leadership Conference, we recognize a strategic customer who is committed to our business. After reviewing internal nominations made by our business units, we select one customer who has recorded significant achievements over time. The customer is granted Netafim's Outstanding Customer Award, and is invited to our conference and to a visit of our Israeli sites. During the visit, the customer meets with local professionals, and takes a guided tour of the country.



The winner of our Outstanding Customer Award in 2013 was Maple Energy plc of Peru. Maple turned to Netafim in 2009 to manage and carry out an 8,000-hectare irrigated sugarcane project, one of the largest worldwide, which provided jobs for over 3,000 people in the local community. Over the next three years, Maple and Netafim joined forces to successfully complete the sugarcane-to-ethanol project. The Netafim Peru team laid out over 45 million meters of dripperlines at an astounding rate of 850 hectares per month, over four times faster than the average rate. As a result, we met the unprecedented 18-month timetable with two months to spare. Maple's \$245-million plant opened in April 2012, and can produce 35 million gallons of fuel-grade ethanol annually. We recognize Maple for having the courage and vision to irrigate sugarcane with drip, and for forging a long-term relationship with Netafim built on trust, cooperation and shared values.



## TALKING ABOUT NETAFIM'S ROLE IN SUSTAINABLE AGRICULTURE

### CARLO GALLI

Technical and Strategy Advisor,  
Water Resources, Corporate Operations, Nestlé

"Sustainable agriculture is a number one issue for us. It's related to food security at the most fundamental level. At Nestlé, we have been collaborating with Netafim in the area of coffee production for the development of a way to connect the many smallholder farmers in our supply chain to Netafim's technology. This will benefit farmers, but it's also a way for our coffee business to become more sustainable.

There is no one solution that fits all with regard to farmers. A company such as Netafim can engage in different local platforms to reach smallholders and connect with policy makers to promote these solutions. The adoption of technology in different crops, including new solutions for low-value crops, is critical. The majority of water issues in the production of commodities revolve around not providing the right farming conditions.

I think that an investment for adoption of drip irrigation technologies in other basic crops is so important, and Netafim could offer more turnkey-type solutions that provide farmers with real opportunities and the confidence that they can do better. A big consideration, for example, is trust in the system. Farmers are working with such low margins for error that they cannot afford to take the risk on something they have not seen implemented.

Netafim can help prove to small farmers that drip is a reliable solution, and provides tangible environmental and economic benefits. Perhaps helping to facilitate low-cost crop insurance could be a tool to help reassure farmers that it's okay to take the risk of investment in drip irrigation.

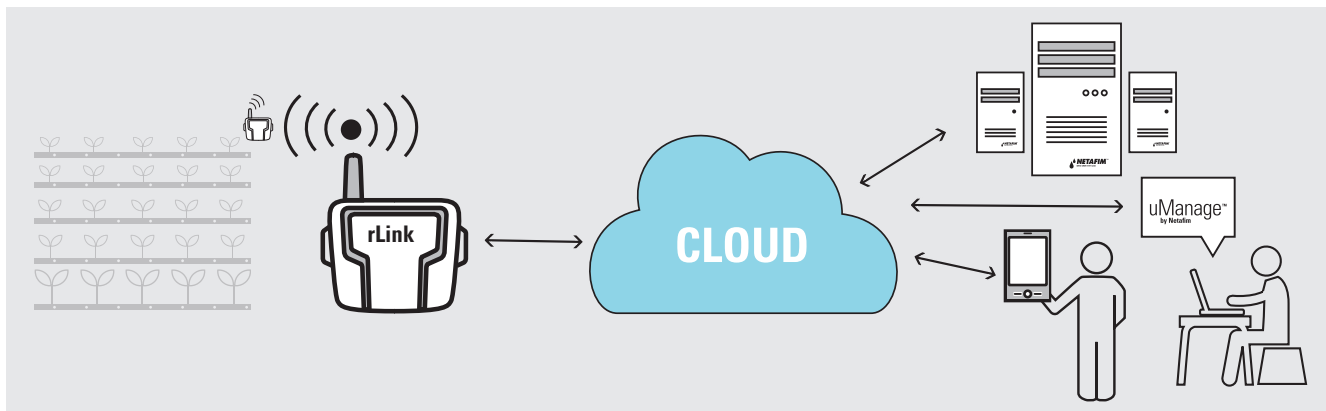
Netafim is already at the forefront of the water debate and the discussion about integration of platforms to promote sustainable water use. Netafim's role in the CEO Water Mandate is an important one. I think that Netafim should continue to strengthen this leadership position, in particular, in the dialogue with governments to help connect water policy makers with the realities that farmers face. Netafim can make a difference not only as a technology provider, but also as a promoter of more sustainable practices. The real need is in underdeveloped markets. In developed markets, Netafim can help promote drip irrigation as an affordable solution for both cash crops as well as high-value crops. In emerging markets, the need is much more critical. Technology needs to be accessible for smallholder farmers. This means continuing to develop innovative technology solutions, as well as providing the support systems that can make them viable."

## COLLABORATING FOR A BETTER FUTURE

Our promise is to advance sustainable productivity through the technologies and solutions we provide to customers worldwide. Delivering on this promise obliges us to broaden our relationships, going beyond the direct contact we have with farmers and customers.

As such, we leverage our innovative expertise, and partner with experts in complementary and associated disciplines to put drip irrigation into practice. This enables us to support sustainable development in countries and regions beyond the individual smallholder. Taking place at the heart of the food-water-land nexus, these innovative and collaborative initiatives help us promote solutions that go beyond conserving water.

### INNOVATION IN PRECISION AGRICULTURE



As leader of the FIGARO (Flexible and precise irrigation platform to improve farm scale water productivity) EU R&D initiative, we made great progress in 2013, the first full year of the four-year collaborative project. We measured irrigation efficiency across a range of farmer plots in Europe and Israel to help establish the parameters that will form the baseline for measuring the project's performance in three years.

FIGARO is today's most advanced technological development in sustainable agriculture, and is designed to deliver unprecedented capabilities to growers. Comprised of uManage, Aquacrop, a weather forecasting system, and a hydraulic watering system, the platform will create a 360° model that gives real-time answers to real-time questions. The potential of FIGARO contributing to further enhancements in precision agriculture is great, and we look forward to several more years of successful collaboration and results that will benefit global sustainable development.

### FIGARO

FIGARO is a four-year collaborative research project of 17 partners, headed by Netafim and supported by the EU. Its objective is to develop a cost-effective precision irrigation management platform enabling a significant reduction in the use of fresh water for agriculture in Europe. The platform will be based on Netafim's crop management technology system uManage, which allows farmers to control crops with field-based sensors that transmit real-time data from the field. uManage will be linked to the UN Food and Agriculture Organization's (FAO) Aquacrop software, which offers crop management recommendations based on preset data. Bringing together the best of these solutions, FIGARO will enable farmers to make real-time decisions to regulate water and crop nutrient flow rates as an optimal response to changing external conditions.

**For more information about the initiative, visit [www.figaro-irrigation.net](http://www.figaro-irrigation.net).**

### FOUR YEARS OF FIGARO

- 2013:** Establishing a baseline via traditional irrigation methods and creating a plan.
- 2014:** Conducting trials of different technologies around Europe and Israel.
- 2015:** Combining the best of technologies to create a comprehensive solution.
- 2016:** Creating demos, seeking feedback, and perfecting the solution for sustainable productivity.

## TALKING ABOUT NETAFIM'S ROLE IN SUSTAINABLE AGRICULTURE

### PASQUALE STEDUTO

Deputy Regional Representative for the Near East and North Africa, FAO

"Water scarcity is a complex problem and needs a fitting solution. There are many organizations developing niche approaches to conservation – reducing water withdrawal and recycling wastewater, for example – and efficiencies are being achieved. Progress has been made across a spectrum of water issues. People are smart – individuals know how to implement new ideas. However, when it comes to water, we are still not at a systemic level of change. There are very nice success stories here and there, but knowledge is scattered. In general, we risk running out of water before scalable, systemic solutions are adopted. We need to be mindful of the role of government in creating a vision of the future and defining its role in the food-energy-water nexus. How a country plans its water resources going forward is critical. How a country allocates development funds is dependent upon current performance in many areas, for example, agricultural efficiency at the farmer level and uptake of best practice. The collective work on FIGARO will be critical not only to provide improvements in sustainable agriculture, but also to facilitate more robust resource planning at national and regional levels.

Precision agriculture is a technological improvement needed to increase the productivity of water. In my view, FIGARO is an incremental change that will deliver opportunities to do more. It might represent a quantum leap if it's applied in an environment that fully exploits the available technology. If you want to introduce precision agriculture, you need to have precision information and data. The whole system needs to work well together. If we apply advanced technology to an environment where the information base is not ready, then we will not fully

exploit all the possibilities. The ultimate breakthrough is full automation in agriculture. Netafim is highly appreciated for the work that it is doing. It is not by chance that Netafim is considered an advanced company that has worked for so long in the area of drip irrigation. The Stockholm Industry Water Award is evidence of this. Netafim has all the legitimacy of a company that has been investing in research to provide technology that is of use to the agriculture and water sectors. One step further for Netafim could be the provisioning of a full agriculture service. Rather than just providing the hardware for drip irrigation (e.g. dripperlines, emitters, regulators valves), Netafim could consider becoming providers of a service. In an evolution from hardware to software to service, it might make sense for those with the expertise in automated precision agriculture to actually manage it.

When we get back to our day to day, however, we must recognize that even irrigation as a more efficient way of farming is not necessarily the entire solution. Drip irrigation has innumerable benefits, but at the end of the day, if we are farming more, we need more water, and the overriding problem remains. We still need to reduce the demand side, and create changes through the entire value chain to ensure that the benefits at one end, such as irrigation, contribute to an overall benefit at the other end, such as consumption.

At the end of the day, every individual can do something when they understand that we all need to reduce consumption. As an influential company, however, Netafim should continue to be an activist at the social and political levels to help drive systemic sustainable change."



## BRAZIL: Crop optimization innovations

We continue to invest in innovative technologies for drip irrigation applications, and maintain a full program of tests and trials to explore ways to optimize crop efficiency. Our work doesn't focus solely on water conservation. In certain cases, other factors are just as important such as pesticide and fertilizer effectiveness. In 2013, we demonstrated drip solutions that improve overall optimization of crop nutrients, leading to increased yields, reduced waste, lower farmers' costs, and less soil pollution through chemicals. We demonstrated positive results in two ongoing trials in 2013.

### CONTROLLING SUGARCANE PESTS

By introducing bio-insecticides through a subsurface drip irrigation system, we lowered by 81.8% the presence of the Giant Borer pest in sugarcane plantations in the Brazilian state of Alagoas. Previously, the insecticide had been sprayed or sprinkled over the crops, leading to lower efficiency and higher waste. This represents the first time we used drip irrigation to transport the naturally-growing insecticide fungus that reduces the presence of Giant Borer.

### CREATING FERTILIZER FROM WASTE

We achieved initial positive results in trials in Sao Paulo, Brazil, using vinasse as a fertilizer introduced through subsurface drip irrigation. Vinasse is the main by-product of ethanol production in sugar mills, which generate over 230 million cubic meters of vinasse every year. Vinasse contains high levels of salts and organic material, and its disposal leads to soil and groundwater pollution. The advantage of adding vinasse through drip is that it can be diluted and applied over the long term. As a result, the method avoids high chemical fertilizer concentrations required by other irrigation methods, and is far safer for the environment.

In this win-win solution, we not only provided an environmentally-safe disposal route for vinasse, but also improved farming efficiency at a lower cost.



**WE LEVERAGE OUR INNOVATIVE EXPERTISE AND PARTNER WITH SPECIALISTS TO PUT DRIP IRRIGATION INTO PRACTICE.**

## ADVANCING SCIENTIFIC APPLICATIONS THROUGH DRIP

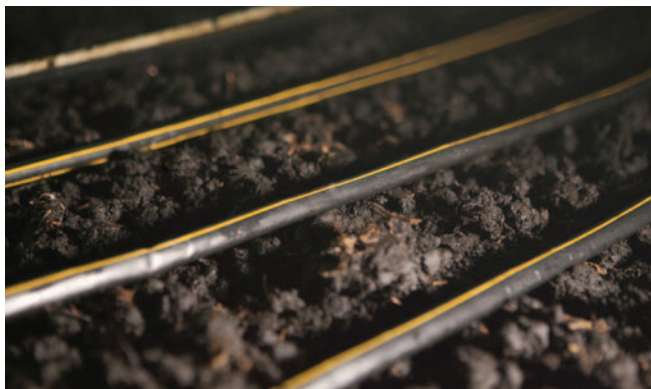
Our ongoing technological efforts are often supported through grants made by Israel's Office of the Chief Scientist (OCS). At any given time, we work on multiple projects to advance scientific applications that will benefit sustainable agriculture development. In 2012-2013, we pushed forward seven projects supported by the OCS. In 2013, we worked on two ongoing projects, one of which was completed. We're pleased to provide updates on these innovative developments.

### ISRAEL: IMPROVING MUSHROOM-GROWING EFFICIENCY

We have proven that drip irrigation increases mushroom-growing efficiency and saves on valuable natural resources. We developed a unique solution for growing mushrooms based on our low flow rate drippers that enable precise irrigation. Until now, mushrooms have been typically irrigated by sprinklers, a method that wastes water, soaks the peat bed, and can overwet the plants.

Mushrooms are grown in enclosed units on detached beds of sphagnum peat. Sphagnum peat is a valuable natural resource, forming part of the habitat of a range of species in nature. This type of peat has been depleting at a faster rate than it can be renewed, reinforcing the need for sustainable productivity. In this project, we not only proved that drip irrigation works, but also discovered that mushrooms can be cultivated in thinner beds of sphagnum peat, thereby preventing unnecessary depletion. Our drip irrigation solution increases yield by 11.5%, while saving on peat, water and energy.

**↑ 11.5%**  
YIELD INCREASE



### ITALY: PRECISELY IRRIGATING GRAPEVINES

We have been working in Italy to identify precision irrigation for grapevines that need faster-than-ever response times due to climate changes and fewer rainy seasons, which are suitable for vineyards. We collaborated with two universities – Israel's Ben-Gurion University of the Negev and Italy's University of Udine – and received funding from Israel's Office of the Chief Scientist to test the retrieval of real-time weather, soil and plant data from the vineyards. With this information, we can modify real-time drip irrigation decision capabilities, ensuring that the water and nutrients go directly to the vines' roots exactly when needed. Our research is still in its initial stages, but we expect to develop a system that delivers optimal irrigation scheduling to ensure continued production of high-quality grapes and Europe's best wines.

"This project demonstrates the way Netafim helps create a true market transformation, assisting grape growers who are quite confident with trusted growing methods that have been handed down for generations. Growers are slowly adjusting to agri-tech solutions, including analysis of weather trends, and finding there are new benefits to be gained."

Orit Katzir, Electronics Engineer, CMT Products Manager

## KENYA: Empowering women farmers

In an effort to improve accessibility to drip irrigation in Kenya, we launched, together with our local distributor, the Financing Drip Irrigation Systems training project in 2013. Part of the Feed the Future Partnering for Innovation Program, a USAID-funded framework, the project involves the training of 2,000 farmers, half of whom are women, to improve yields and crop efficiency. Targeting smallholders with plots of up to one hectare, the two-year project offers a family farmer drip kit that combines installation of our Family Drip System (FDS), active training, and financing solutions. USAID funding was used to establish two initial training centers with demonstration plots, and we plan to create three more centers during the course of the project. The training centers are staffed by local agronomists who are familiar with a variety of local crops and conditions, and who can advise participants how best to use FDS while creating the right conditions for farmers.

This project goes well beyond irrigation in its support of African women farmers; at least half of all trainees in the program must be women. The initiative also incorporates a micro-financing loan tool to help farmers obtain preferential terms for small start-up business loans, while providing training in financial decision-making. In addition, buyers in Europe are already partnering with Kenyan farmers who receive seeds and agree to enforce drip irrigation and other sustainable farming protocols. This guarantees customers who will buy their produce, making it a low-risk initiative designed to create significant economic empowerment and growth in Kenya.




## MACEDONIA: Boosting small-scale farmers

We embarked on a partnership with the Carana Corporation in the USAID-funded Small Business Expansion project in Macedonia in 2013. The project aims to supply small-scale farmers with drip irrigation systems and improved farming protocols, as well as to offer training and knowledge sharing to help them achieve best results.

In the initial project pilot, we installed drip systems across 44 hectares owned by 100 smallholders. These plots not only are used for commercial production, but also act as a training center for other regional farmers. In the summer of 2013, one of the driest on record, our drip systems led to corn yields of up to 17 tons per hectare compared to 5 tons per hectare with fields relying on rainfall for irrigation. These results represented a double win for the farmers. Even though the dry season had led to a crop shortage and price increase, the project enabled the farmers to sell more corn at higher prices. As a result, the Macedonian government has pledged to finance 50% of the funds required for supporting an additional 400 farmers to adopt drip irrigation.



 **5 → 17**  
INCREASE IN YIELDS  
(tons/ha)

## INDIA: Increasing irrigation transformation

Our growing presence in India is helping to transform the large country's agricultural landscape, thereby making a difference to tens of thousands of smallholders. Drip irrigation has clearly proven to be a boost for economic growth, food security, environmental stewardship, women's empowerment, community development and overall quality of life. As a result, there are far more success stories in India than we are able to report.

Drip irrigation is well supported by the Indian government, which has contributed to the relatively high penetration of drip, currently at 10% on average, but reaching 20% in some states. Our reach in India is supported by our Netafim India team with over 2,700 employees, and a country-wide network of over 1,300 dealers. We also run the Netafim Agricultural Financing Agency (NAFA) to support the financing of drip irrigation

for smallholders (see Financing for Mass Adoption section). Our continuous efforts to advance drip irrigation by operating NAFA, training customers, dealers and farmers, and partnering with government agencies and organizations have again led to positive environmental and economic impacts this year.

In 2013, we installed drip irrigation systems across 87,000 hectares, an area nearly three times the size of Malta, which represents a 12% increase compared to 2012. More than 60,000 farmers work on the irrigated land located throughout India. Extrapolating data from a 2009 government survey on drip irrigation benefits, we calculated that our solutions deliver benefits to the economy, environment and farmers worth over \$51 million. That translates to an additional \$850 in annual profits for each farmer in a country where the average national per capita income in early 2014 was \$1,140.

Savings due to lower resource consumption		
Water savings	Fertilizer savings	Energy savings
290 million cubic meters	3,395 tons	248 million kWh
\$22.5 million	\$1.6 million	\$2.1 million
<b>Total water, energy and fertilizer savings: \$26.2 million</b>		

Additional productivity benefits due to increased yields and higher quality crops
<b>\$25.6 million</b>

Overall benefits of growing more with less to 60,000 Indian farmers
<b>\$51.8 million</b>

### ADVANCING THE GUJARAT GREEN REVOLUTION

The Gujarat Green Revolution Company is a government agency that works with the private sector to empower farmers. Netafim's collaborative relationship with the agency started in 2010. That's when we formed the Micro Irrigation Scheme (MIS) partner model with a third partner, the Gujarat Agro Industries Corporation Limited, a government enterprise tasked with promoting agricultural activities and development of agro-based industries in Gujarat. We installed drip irrigation for 23 smallholders in the tribal village of Moti Tokri, training all farmers in irrigation techniques. Yields were doubled while fewer resources were used, contributing to a dramatic increase in farmer income for crops such as corn, chili, tomato and cotton. Today, Moti Tokri is a model village for helping to demonstrate the benefits of drip irrigation and to inspire other farmers to invest in drip.



## WINNING RECOGNITION

We are pleased to note that our investment in India has not gone unnoticed. In 2012-2013, Netafim India was recognized in a number of ways for its significant contribution to agriculture and irrigation development in the country.

- The Indian Economic Development and Research Association (IEDRA) awarded Netafim with the Indian Industrial Excellence Award (IIEA) for excellence in manufacturing irrigation equipment and supporting an increase in productivity and water use efficiency.
- The Engineering Export Promotion Council (EEPC) honored Netafim India for export excellence and green technology.
- Netafim India was nominated the "Most promising irrigation, field automation solutions and service provider in southern India," as part of as part of the Southern India Business and Service Excellence Awards 2012, organized by Big Brand Research Pvt. Ltd.

## AUTOMATING WATER RELEASE

In early 2014, we were awarded our largest-ever contract in India – a \$62 million irrigation project for farmers in the southern state of Karnataka. Netafim India will build an automated water pipeline network to source water for drip irrigation across 11,700 hectares. The contract, auctioned by state-owned Krishna Bhagya Jala Nigam Ltd., will help 6,700 farmers through the simultaneous release of water, enabling all farmers to benefit from Netafim's drip irrigation system.

*"The most critical problem for Indian farmers is that they face acute water shortage, labor shortage and power unavailability in peak seasons, leading to lower farm productivity. With Netafim's advanced irrigation technology, we help farmers combat these issues, ensuring more and higher quality produce. This gives farmers a positive return on investment in their field in terms of time, money and effort. Netafim India supports farmers after system installation, providing agronomical and technical support from the start and for as long as needed. It's not just an irrigation system – it's an entire approach to getting the best out of every farmer and his fields."*

Randhir Chauhan, Managing Director, Netafim India

## CHINA: Combating desertification



- ● **FEWER HARMFUL SANDSTORMS IN REGION**

Netafim is working with Elion Resources Group and the Chinese government in an ongoing initiative to reduce desertification by integrating sustainable agriculture in the Kubuqi Desert. We're helping Elion strengthen the region's desert economy, and thus far have succeeded in improving the ecosystem and alleviating poverty. Elion has been working on ecological management in the Kubuqi Desert for 25 years, having developed the Kubuqi Model for sustainable development. The model is dedicated to the desert's ecological transformation in order to mitigate climate change and environmental degradation.

Our contribution to the project in 2013 included installing drip irrigation equipment, and creating a "green belt" area in the desert region. The Kubuqi region is characterized by sandy soil, low water availability, and sandstorms that create challenges for micro-irrigation. Accompanied by applied development work and trials, we designed a system across over 200 hectares to withstand the rough desert conditions. We trained 100 desert farmers in the use of drip irrigation, and provided agronomic support and ongoing advice.

Desertification is a global phenomenon, affecting over 1.5 billion people, and causing the loss of 12 million hectares of land. Cultivation of the Kubuqi Desert has already led to a decrease in the number of harmful sandstorms in the region. The area selected for the project was unpopulated and remote, over 20 kilometers from the nearest village. Now, about 20,000 people live in the vicinity, and the main livelihood is smallholder farming of potatoes, sunflowers and corn. Cultivating the desert is an excellent example of the benefits that can be gained by the food-water-land nexus.



### JAPAN: WINNING AWARD FOR ECO-BUILDING PROJECT

In 2013, Netafim Japan won the A+ Architizer Award in the category of Architecture and Work Place for its Pasona project. The award recognizes the world's best architecture projects. The Pasona O2 building in Tokyo is an eco-office with a 4-acre urban farm covering its walls and floors. Netafim supported the project from initial planning stages, providing agronomic and technical consultation, and equipping the building with drip irrigation systems.

## SUPPORTING POLICY FOR SUSTAINABLE AGRICULTURE



One of the areas we focus on is enabling greater accessibility to drip irrigation technology, which sits at the heart of the food-water-land nexus. Since an initial investment is required to install drip irrigation systems, many smallholders – the millions of small-scale farmers worldwide who grow much of the food we eat – do not have the means to adopt the technology.

To ensure equal access to drip technology around the world, especially in emerging economies, governments must be involved. As a result, we have taken an active stand in supporting a sustainable agriculture public policy. Through our work with local, national and municipal governing bodies, participation in global working groups and policy-influencing organizations, and partnerships with NGOs, we encourage policy makers to promote drip, facilitate its access, and provide incentives for its usage.

### UN GLOBAL COMPACT



United Nations  
Global Compact

Since 2008, we have participated in the UN Global Compact (UNGC), making us one of the first Israeli companies to support this initiative. Netafim was also one of a select group of companies invited to join the UNGC's LEAD program in 2011. Program members include companies with a history of engagement with the UNGC that have been committed to implementing its Blueprint for Sustainability Leadership and participating in its global initiatives.

As a participant in UNGC's LEAD, we undertake to advance the principles of the UNGC at a higher level, embedding the 10 principles of responsible business into our work, and acting as an ambassador of responsible business. We are also committed to transparent reporting vis-à-vis the 21 criteria established for LEAD companies.

### UN CEO WATER MANDATE



The CEO Water Mandate

Since 2008, we have participated in the UN CEO Water Mandate, which is designed to assist companies in the development, implementation and disclosure of water sustainability policies and practices. The CEO Water Mandate recognizes that the business sector, through the production of goods and services, impacts water resources both directly and via supply chains. By endorsing the CEO Water Mandate, we are committed to making the management of water resources a priority, and to work with governments, UN agencies, NGOs and other stakeholders to address the global water challenge.

In 2013, our Chief Sustainability Officer, Naty Barak, was invited to join the CEO Water Mandate Steering Committee. The committee is comprised of 10 corporate representatives, and is charged with strategic, administrative and financial leadership of the initiative.



### JOINING THE WORLD ECONOMIC FORUM (WEF)

In 2013, we were accepted as one of the World Economic Forum Global Growth Companies. Criteria governing our selection included:

- **Growth:** Demonstrated track record of above-average, sustainable growth in the past three to five years.
- **Impact:** Major influence in the agriculture, food and water industries.
- **Leadership:** Top executive team that has demonstrated visionary leadership.
- **Global corporate citizenship:** Proven commitment to positively influencing the societies and regions in which we operate.

In 2012-2013, our CEO and Chief Sustainability Officer participated in several conferences, forums, working groups and other industry meetings to promote sustainable agriculture concepts in the private and public sectors. We are active in three primary areas of dialogue and policy advancement relating to water and human rights, corporate water disclosure and engagement, and collective action.

We also regularly participate in global conferences on water and food sustainability.

### SPEAKING ACROSS THE GLOBE

Below is a selection of Netafim speaking engagements at recent global conferences.

- Rio Earth Summit (Brazil, 2012).
- World Water Forum (Marseille, France, 2012).
- Global Food Security Forum (Rabat, Morocco, 2012).
- Strategic Agricultural and Food Shortage Solutions for Africa conference (Tanzania, 2012).
- World Water Week (Stockholm, 2013).

Our CEO led 45 CEOs at the Rio Earth Summit to sign a memorandum of understanding (MOU) calling upon governments to make water a top global priority. We also led a seminar on attracting investment in drip irrigation at a USAID conference in Africa, and addressed a UN Global Compact gathering at the World Economic Forum in Davos in 2013.

We engage with local governments for promoting drip irrigation as a best practice for sustainable productivity through lectures and demonstrations of our capabilities. In 2013, we hosted in Israel a delegation of the Indian parliament and the Colorado Public Officials Mission Delegation. These delegations are comprised of key policy makers in their countries, and their understanding of the importance and benefits of drip irrigation is instrumental in promoting mass adoption of drip in their countries.



## PROMOTING SUSTAINABLE AGRICULTURE BUSINESS PRINCIPLES

In 2013, Netafim Chief Sustainability Officer Naty Barak joined the Food and Agriculture Business (FAB) Principles, a UNGC Core Advisory Group. The group is comprised of 30 business and civil society representatives working to develop a voluntary framework for principle-based collaboration of companies with the UN, governments, civil society and other stakeholders.

The group guides businesses on ways to make a positive impact on agriculture and food system sustainability, and to align their contributions with UN priorities and the post-2015 Sustainable Development Agenda.

The work included ongoing collaboration among advisory group members, as well as an inclusive multi-stakeholder process comprised of over 20 global consultations. It also included over 1,000 businesses, UN agencies and civil society organizations involved in agriculture, nutrition and food systems.

The FAB principles are now publicly accessible on the UNGC website. UNGC companies in the food and agriculture sector are invited to commit to the FAB Principles by reporting on progress through their annual Communication on Progress (COP).

### FOOD AND AGRICULTURE (FAB) BUSINESS PRINCIPLES

- **Principle 1:** Aim for food security, health and nutrition.
- **Principle 2:** Be environmentally responsible.
- **Principle 3:** Ensure economic viability and share value.
- **Principle 4:** Respect human rights, create decent work, and help communities to thrive.
- **Principle 5:** Encourage good governance and accountability.
- **Principle 6:** Promote access and transfer of knowledge, skills and technology.



## INDIA: Understanding drip irrigation's impact on women farmers

"One way to get women fully and equally involved in agricultural production is by encouraging them to use technology. This will not only lead to greater food production, but also help narrow the gender gap. Within the framework of my university studies, I conducted a qualitative research project in 2013 to better understand the role drip irrigation technology plays in the lives of several women growers in Gujarat, India. Based on interviews with 12 women farmers, I gained insight into the gender-specific challenges they face, as well as the significance that drip technology plays for them.

According to the study's results, these women are not only more exposed to greater opportunities, but also feel more empowered, which they attribute to the use of modern agricultural technology. While all interviewees emphasized that their main role is as a family caregiver, they have acquired a new body of knowledge that enhances their professionalism in a field that once belonged exclusively to males. Even though their daily routine may not have changed significantly after adopting agricultural technology, which rural Indian society considers innovative, their lives have become easier due to greater income and time savings.

It is clear that drip technology is being integrated into the women's daily routine to help bring about change. However, the strength of traditional gender roles means these changes will take time.

While I cannot draw definitive conclusions given the small sample of interviewees, the results of the study offer much food for thought, and provide a starting point for a more in-depth look at the issue in the future."

Rachel Shaul, Head of Corporate Marketing



### WOMEN LACK AGRICULTURAL RESOURCES

While women represent about half of the world's population and half of its agricultural workforce, they produce less food relative to their male counterparts. According to the UN Food and Agriculture Organization (FAO), this gap is due to women's limited access to resources, education and financial/commercial services in developing countries. While male growers enjoy easy access to resources such as land, financing, technology and know-how, the same cannot be said for women.

## REAL WOMEN, REAL FARMERS, REAL VIEWS FROM GUJARAT, INDIA

"I really enjoy looking at what I'm growing right now. The first time we planted chili peppers, the crops grew nearly as tall as us. That was amazing. We had never seen such tall chili plants. It feels good - whatever you are doing, you feel you are moving towards hi-tech or modern farming or something. More than what we were doing before."

"We bought this house from the money we made after installing the drip irrigation system."

"I feel proud that I was able to do something for my kids. I hope I will be able to do even better in the future. I have seen other kids study and progress, and so I also wanted to educate my kids and help them achieve success."

"It used to take me 10 days to water my field, and now it only takes 1 or 2 days. Of course, I still spend 2 or 3 hours each day, but that is still less than what I did in the past. Also, weeding is reduced, so we need fewer workers."

"We felt very proud when we installed this technology, so much so, that we didn't feel like going home (from the farm). We felt a great sense of excitement watching the system function."

"I want to help everyone become like me. I want to help them become self-dependent. I give guidance to many girls... people come and talk to me; I tell them that everyone should work, so that they can be independent"

"In the past I used to worry about how much crop would there be. Now I know that I will get 3 lakh for these bananas. Before drip, I wasn't sure I could reach 3 lakh. Now I am certain the crop will be worth 3 to 4 lakh"



## TALKING ABOUT NETAFIM'S ROLE IN SUSTAINABLE AGRICULTURE

### ALEJANDRO LITOVSKY

Founder and Chief Executive Officer,  
Earth Security Initiative (ESI)

"The Earth Security Initiative provides a new level of intelligence on inter-connected sustainability risks. It acts as a strategic broker to help leaders in business, government and society work together to shape solutions for complex resource security challenges. The ESI's risk dashboard – the Earth Security Index – focuses on a level of data and visuals enabling leaders to reduce the complexity of risks and opportunities arising from resource limitations given the sustainability challenges that may impact company performance and government stability.

As Netafim's experience in South Asia and sub-Saharan Africa illustrates well, business solutions to sustainability challenges work best when industry and policy makers work together to align the delivery of new technologies with financial and regulatory incentives. I see the potential for Netafim to increase its market share, while having a substantial impact on how industry and policy makers understand these synergistic opportunities, in three key areas.

First, by providing a practical technological solution to address water stress at a time when the economic and political importance of water scarcity is growing. The ability of the company to shape favorable policies by engaging with policy makers will be easier as governments come under resource pressures, and are more open to consider ways to support market solutions.

Second, by explaining the role that drip irrigation plays in the overall resource efficiency of agriculture. For example, by improving soil nutrient management and allowing more controlled application of fertilizers and pesticides, and by improving the water footprint of particular water-intensive crops in the supply chain of global food companies. This allows Netafim to scale its joint ventures with governments and companies in different parts of the agricultural supply chain.

Third, by linking drip irrigation more centrally to food security at national and global levels. Increasing Netafim's market share at the base of the pyramid will help achieve food security goals, and improve the income of smallholders due to productivity increases. Developing these markets will require policy makers to understand how to create incentives, from lowering import duties to calibrating agricultural extension services and public financing.

In all these areas, Netafim has the opportunity to articulate a vision of success and to define performance measures and targets in cooperation with policy makers. Therefore, while providing a blueprint for governments to participate in that vision, Netafim can also build a strategy to increase its market share."

## OUR ACCOUNTABILITIES

We are committed to responsible and ethical behavior throughout our operations. This is based on a strong core of values and a desire to do the right thing, respecting all those with whom we come in contact during the course of our business.

Our accountabilities start with creating a positive, safe and nurturing workplace for our employees. We invest in developing our employees, and provide them with meaningful and rewarding work and fair compensation. We encourage open dialogue and collaboration, which has been a great strength of Netafim over the years.

We maintain a network of manufacturing facilities, suppliers and dealers who are involved in sourcing, converting and distributing our drip irrigation systems to our customers, and providing service throughout the life of the products.

We maintain positive relationships throughout our supply chain, based on a collaborative partnership approach.

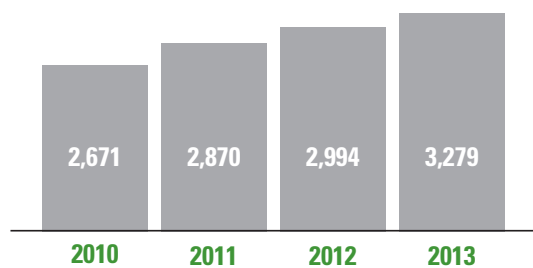
### OUR SUPPLY CHAIN

SOURCE	CONVERT	DISTRIBUTE	SERVICE	COLLECT
Raw materials for dripperlines and other peripheral products	Raw materials into drip irrigation products	Products to our customers directly or through our global dealer network	Installation support, technological service, and agronomic advice to our customers	Used dripperlines for recycling and utilization of various drip irrigation applications

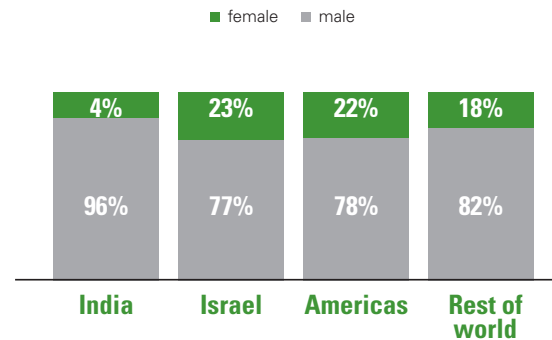
## OUR EMPLOYEES

Our employees are the drivers of our success. We rely on their engagement and passion for sustainable agriculture, as well as their creativity and skills, to continue to develop our business. Our aim is to provide a meaningful work environment that empowers employees to be highly effective, motivated and engaged, and to offer fair compensation. Spread across 27 countries, our direct workforce has increased steadily to best serve our growing customer base.

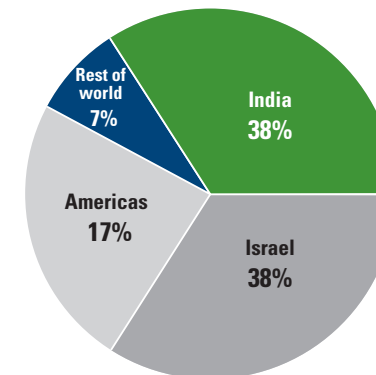
**Growth in global employee base  
2010-2013**



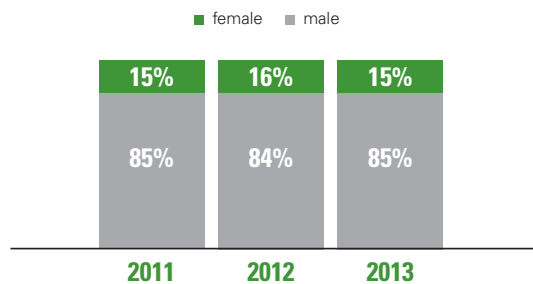
**Employees by region and gender in 2013**



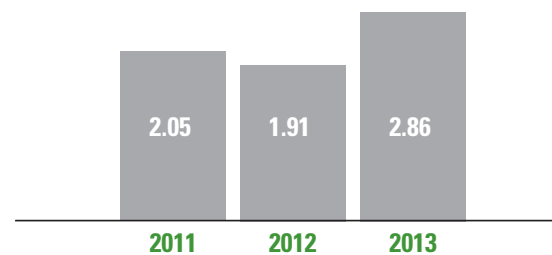
**Employees by region in 2013**



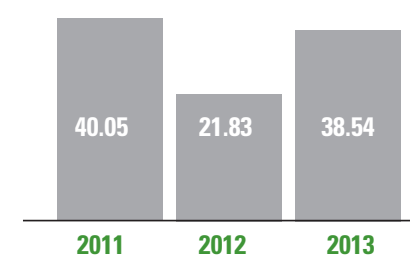
**Employees by gender**



**Injury rate  
(injuries per 100 employees)**



**Lost day rate  
(lost days per 100 employees)**



Note: The above charts relate to Netafim's permanent employees. In addition, we employ up to 1,000 temporary and contract employees at different times.

## EMPLOYEE PERFORMANCE AND DEVELOPMENT

We rolled out a new performance management system across our global operations in 2012-2013 to enable consistent performance development processes throughout the organization, and to give employees equal opportunity to develop and advance. Our Performance Reward Process (PRP) is designed to harness the professional and personal strengths of our employees in order to meet our business objectives and improve business performance. As part of this process, we have intensified our employee training efforts, and invested some 13,000 hours in training and development programs for our employees worldwide in 2013.

*"I believe that the essence of the PRP is people. When the path and the goals are clear to us, when they are part of something bigger, we can relate to them in a way that energizes us to achieve our goals, stretch our capabilities, and open our minds. I also believe that this process continuously raises the standards and goals that we define for ourselves, challenging and inspiring us both as individuals and as a company."*

Shuli Ishai, Chief Resources Officer

### LEADERSHIP DEVELOPMENT

In 2013, we further invested in a leadership development with two key areas of focus. The first was a leadership development program for around 30 global business unit managers worldwide. The program was conducted in two half-week sessions in Israel, with a focus on creating multi-disciplined, cross-organizational teams to work on various organizational challenges. Participants also received personal mentoring.

Also in 2013, we adopted a new process to identify and support our high-potential future leaders, and created a program to help them succeed. A group of 15 upcoming leaders participated in a full-day monthly workshop and in supplementary meetings to enrich their knowledge and skills. Each potential leader created a personal development plan with their direct manager, and will pursue it in the coming years with the support of our organization.

### THREE CIRCLES OF EMPLOYEE TRAINING

In 2013, we created a new training platform to address employee needs throughout their work life cycle at Netafim – from new hires, through employees in professional roles, to managers.

**First circle – Netafim orientation:** We developed a program to familiarize newly hired employees with our business and products as well as with sustainable agriculture. The program included visits to all our operational sites in Israel, including our research and development and drip irrigation training centers. Some 200 new employees participated in this program in 2013.

**Second circle – professional skills:** This program included modules specifically developed to address needs that will help employees improve their job skills. The modules included topics ranging from project management to English. In 2013, 121 employees completed at least one module in line with their professional development needs.

**Third circle – management skills:** Modules were developed to complete the management tool box that all managers should complete as they develop in their roles. Each module is designed to address specific production operation or head office roles. In 2013, 48 managers completed this set of modules.

*"Investing in the development of our employees makes a real difference in their capabilities, motivation and ability to work collaboratively with other team members. We design our training to meet specific needs, and employees have confirmed that this is helping them perform better."*

Rinat Peleg, Learning & Organization Development Manager

## TECHNICAL TRAINING IN INDIA

In India, we conduct a major technical training program every two years to refresh employee knowledge, and help develop their skills for improving job performance. The program is conducted by Netafim experts from Israel and India, and covers a full range of new technologies, research, products, trends and agronomic developments. The most recent training event was held in 2012, and involved over 200 employees during four days of training.



**13,000 HOURS OF TRAINING AND DEVELOPMENT PROGRAMS**



## PERFORMANCE MANAGEMENT

All Netafim employees participate in an annual performance evaluation that includes a review of performance versus targets and the setting of objectives for the following year. In line with our PRP process, we modified our performance evaluation to create a global format that better reflects the link between performance and reward, and places stronger emphasis on individual and organizational objectives. Some 88% of our employees participated in a performance evaluation in 2013.

Each year we recognize outstanding employees – those who received the highest performance evaluation. They are awarded a special bonus that is presented to them by Netafim's CEO or by their local business unit head in an award ceremony.



## SAFE WORKPLACE AWARD FOR NETAFIM MEXICO

In 2013, Netafim Mexico's manufacturing group implemented the 5S methodology for continuous improvement in manufacturing processes, including making the workplace safer. We undertook a collaborative initiative with all employees to reorganize work spaces, identify potential safety hazards, and implement a series of safety actions. New safety performance guidelines were communicated to ensure that safety incidents are reported and investigated, and corrective measures are taken. As a result of this effort, Netafim Mexico's manufacturing group received the Safe Workplace Award as part of the Work Safe Environment program of Mexico's Department of Labor and Social Welfare. The program requires several specific safety commitments to address all aspects of workplace safety.



## EMPLOYEE REWARD AND RECOGNITION

We reward employees fairly, equitably and competitively in accordance with local market conditions in the countries in which we operate. All employees receive a base salary equal to or higher than the legal minimum wage in all countries of operation. Local remuneration levels are determined in each subsidiary, and are in line with local employment laws, market norms, and personal skills and performance.

In addition to salary, typical benefit packages for permanent employees include elements required by law and elements that go beyond minimum legal provisions, such as pension plans, health insurance, paid vacation, and maternity and sick leave. Additional benefits are offered by each country in accordance with market standards and local norms. These may include an annual bonus, an annual clothing budget, gifts for birthdays and other family celebrations, free or subsidized meals, and special savings funds.

## EMPLOYEE ENGAGEMENT AND SATISFACTION

In 2012, we launched a series of processes to help support enhanced employee engagement and satisfaction. We conducted a global employee satisfaction survey for the first time, which provided compelling insights into the way our employees want us to help them be their best. Globally, 84% of our employees worldwide participated in the survey. We plan on conducting the survey every two years.

The survey's highest positive score among employees (78.4%) was their willingness to recommend Netafim as a workplace to their friends, which is an indicator of high employee engagement. On the improvement side, employees seek additional training and communications to connect them with what is happening in the company, and to help them improve their contribution.

In 2013, we also rolled out in Israel a social activities program for employees featuring special events throughout the year. The program includes holiday celebrations, happy hours, a company getaway (a first for us), and the celebration of life cycle events such as birthdays, weddings and the birth of children.

## INTERNAL COMMUNICATIONS

We aim to update all employees on global developments in sustainable agriculture, our business strategy and performance, and our organizational processes and procedures. Internal communications is composed of a range of communications channels including face-to-face meetings, digital and written.

- **Roundtables:** We launched a series of roundtable meetings with our CEO and other executives in Israel and worldwide. About 15 employees participated in each meeting, while over 70% of all employees participated in at least one gathering in 2012-2013.
- **Management forum:** About 30 global business unit managers convene twice a year in Israel for this forum, in addition to holding quarterly phone conferences.
- **Global Leadership Conference (GLC):** Once a year, all business unit and local country managers meet to share best internal practices and to align goals and targets.
- **Open House:** Netafim India conducts Open House meetings in each region attended by the local general manager and employees. Managers share business performance and future business plans, facilitate a climate of transparency within the company, and engage in dialogue with employees. All employees have the opportunity to raise ideas or ask questions.
- **Intranet portal:** We maintain several Intranet portals enabling employees to access information about our business and professional knowledge base to help support them. In 2013, we created two new portals to expand this channel's value.
- **Employee newsletters:** We publish a quarterly global newsletter. Newsletters are also issued at local country level, and in Israel, we published three newsletters in 2013.



# 78.4%

of all employees  
recommended  
Netafim as a great  
place to work

## EMPLOYEE HEALTH AND SAFETY

We are committed to maintaining a safe and healthy work environment. Our employees are offered annual health checks, while we regularly conduct noise, hazardous materials, air quality, and radiation surveys. Our prime focus is on accident and injury prevention. We maintain strict compliance with occupational health and safety regulations and international standards, and offer comprehensive training in safety procedures for employees when they join the company, as well as throughout their employment. In Israel, Netafim adheres to the Israeli Occupational Health and Safety Standard ISO 18001 at all plants.

We maintain a corporate safety committee comprised of qualified safety officers, managers and employees. The committee meets several times a year to review practices and approve annual safety plans and progress. All Netafim factories maintain a local safety officer who is responsible for reviewing safety incidents and approving corrective action, monitoring local practices, and ensuring implementation of training plans.

We collect safety data from all 16 of our manufacturing sites worldwide, which is where our main operational activities take place. We currently do not collect safety data from countries where we carry out only sales and distribution activities.

In 2013, 64 employees incurred injuries on the job, translating to a global injury rate of 2.86 per 100 employees. This is a higher rate than in 2012, which we believe is mainly the result of improved reporting procedures. In 2013, we created uniform safety incident and risk definitions, and optimized the measuring and tracking of safety incidents at all four of our Israeli sites. This probably contributed to an increase in reported incidents in 2013. In 2014, we began to develop a similar safety data collection process for all of our manufacturing sites globally.

Sadly, in 2012-2013 we experienced one fatality in Israel – an employee at our Magal plant was killed during a short bicycle ride from the factory.

We maintain a proactive approach to safety management that includes conducting safety surveys, mapping issues, correcting gaps, and preparing for emergencies. We also continue to invest in a wide range of safety training initiatives each year. In 2013, we implemented 280 safety training events for employees worldwide totaling over 300,000 hours.

### SUPPORTING HEALTHY LIFESTYLES

We support employees in maintaining a healthy and balanced lifestyle, and our subsidiaries worldwide are doing more in this area each year. In Israel, for example, we invited employees to participate in Health Days at each site, where they received information about healthy lifestyle habits. In Australia, employees participated in health-related activities throughout 2013 such as fun runs for employees and their families and sickness awareness and prevention campaigns.

### ENGAGING EMPLOYEES TO SUPPORT SUSTAINABILITY



Winning photo by  
Niwat Pomyen

In April 2013, we held the Sustainability in a Snapshot photo contest to promote sustainability awareness among employees and stakeholders. The contest was launched to support the 43rd International Earth Day. Employees and Netafim followers uploaded original sustainability-themed photos to our Facebook page, and the photographer of the snapshot that received the most Facebook "Likes" won a tablet computer.

## SUPPLY CHAIN EFFICIENCY



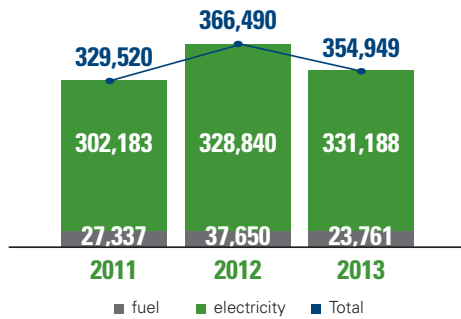
We maintain a lean and efficient supply chain by operating 16 manufacturing plants that are located close to our customers in many key countries. All of our plants operate according to the same rigorous manufacturing standards and levels of operational excellence. In 2013, we reviewed our supply chain processes, and expect to raise the bar in efficiency in the coming years.

Our efforts include a commitment to environmental stewardship. We focus on energy consumption, emissions, water conservation and minimum landfill waste, and in 2013, we recorded improvements in each of these areas.

## ENVIRONMENTAL PERFORMANCE

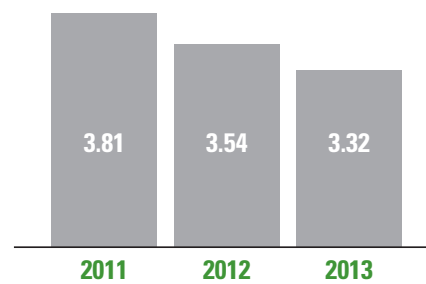
### Energy consumption by type

(GJ)



### Energy intensity

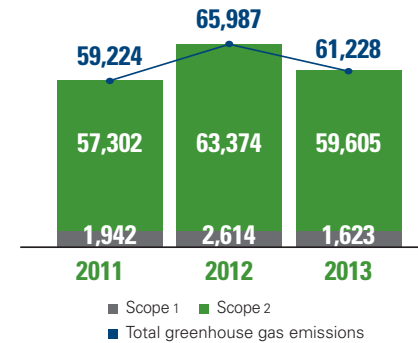
(GJ/ton raw material)



### Greenhouse gas emissions

Scope 1 and Scope 2

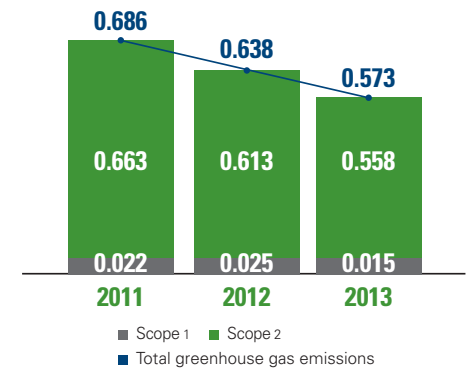
(tons CO<sub>2</sub>e)



### Greenhouse gas emissions intensity

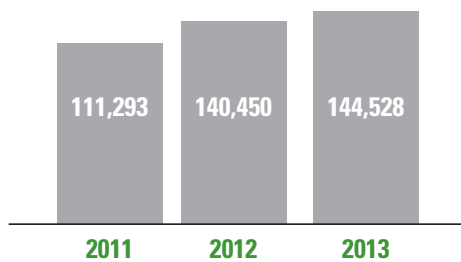
Scope 1 and Scope 2

(tons CO<sub>2</sub>/ton raw material)



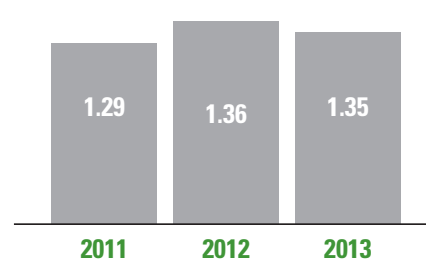
### Water withdrawal

(m<sup>3</sup>)



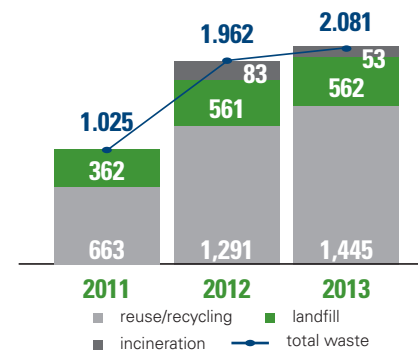
### Water intensity

(m<sup>3</sup>/ton raw material)



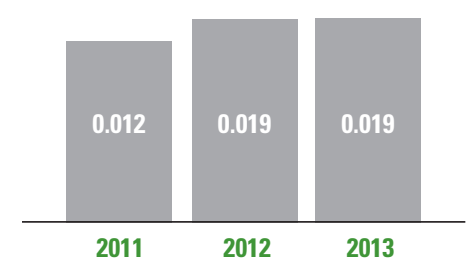
### Waste by disposal type

(tons)



### Waste intensity

(tons waste/ton raw material)



## ENERGY PERFORMANCE

Our energy consumption per ton of raw material used in the production of dripperlines has been consistently decreasing, and in 2013, we achieved a further efficiency gain of 6.2%. This is the result of consistent efforts across our global supply chain to drive energy efficiencies in our production plants. For example, our plant in Rupchen, the Netherlands, maintains an under-floor heating system powered by excess energy from cooling compressors in our extrusion process, saving around 20% in energy consumption each year.

Our main source of energy is electricity that we purchase from local grids in the countries where we operate. Electricity is used to power our production facilities and offices. In addition, we use small amounts of diesel and gasoline to power company cars and forklift trucks and to generate electricity at a few sites.

Efficiency gains were achieved by optimizing production rates, improving maintenance, and replacing equipment with higher energy efficiency alternatives. Diesel use has been reduced mainly by minimizing internal electricity generation with diesel generators, and by switching from diesel powered forklift trucks to electric trucks at our Israeli sites.

### ENERGY EFFICIENCY IN INDIA

In Chennai, we reduced energy consumption from electricity and diesel fuel by 42% per ton of raw material used in production. Over the years, we have used our own diesel-powered generator to supplement our electricity requirements, as grid electricity supply has been unreliable. While this enabled us to maintain production continuity, we absorbed high levels of inefficiency in the conversion process. In 2013, we installed a dedicated feeder that will enable continuous grid electricity supply. As a result, our overall energy consumption in 2013 dropped significantly, and we expect further benefits in 2014 as we completely phase out diesel fuel.

### ENERGY EFFICIENCY IN THE US

In 2013, we reduced electricity consumption by 6% per ton of raw material. This was the result of a \$1.2 million investment to replace the water cooling systems at our US factory in Fresno, California.

Our investment involved the replacement of existing air cooled chillers and cooling towers with a hybrid system that more effectively controls the factory's chilled water system. This enabled a more stable production process, while saving over 4,500 gigajoules of energy.

### ENERGY EFFICIENCY IN BRAZIL

In 2013, we achieved energy savings through the installation of a new transformer and air compressor at our Recife and Ribeirao Preto sites.

At the Recife site, our previous power transformer converted high-voltage electricity received from the electricity power source into lower voltage used for production. As a result, the transformer disrupted production operations at times of voltage instability. To increase efficiency, we installed a new transformer in 2013 that decreased energy consumption by 1% and enabled uninterrupted production.

At our Ribeirao Preto site, we replaced our air compressor, which provides compressed air required for running the plant equipment. The new compressor has flexible settings that adapt to different production requirements, enabling us to operate it at levels some 20% below the previous compressor.

## GREENHOUSE GAS EMISSIONS

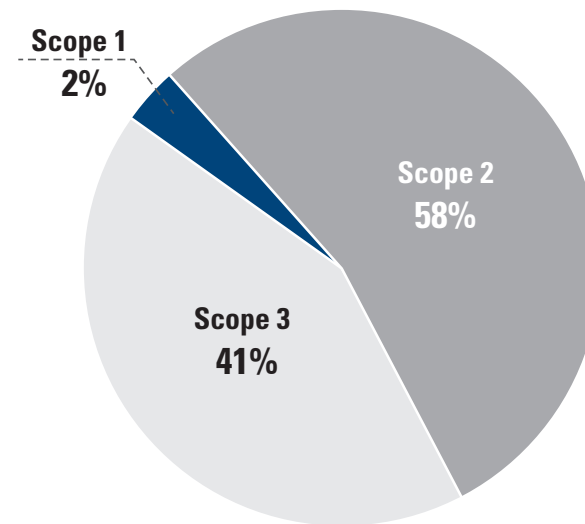
In 2013, we reported a further reduction in greenhouse gas emissions (Scopes 1 and 2) of 10% per ton of raw material in the production of dripperlines. Nearly three-quarters of the reduction were due to emission conversion factors for electricity in Israel that increased the natural gas component in electricity generation. The rest of the reduction resulted from plant energy efficiencies that led to lower energy consumption.

For the first time, we collected information on Scope 3 emissions for business air travel and product transportation. In 2013, we collected data from nearly all of our global operations. Most of these emissions are generated by transporting our products to our factories and customers.

### REDUCING EMISSIONS THROUGH TRANSPORTATION EFFICIENCY

In 2012, we embarked on a new initiative to improve the packaging efficiency of one of our leading products, the Streamline™ dripper, which accounts for a large share of our transportation requirements. We increased packaging and shipping efficiency by reducing the buffer space above packed drippers in each box from 5cm to 1cm. As such, we increased the number of drippers in each box by 28%, and decreased the number of pallets shipped by 14%. Going forward, we will seek further opportunities to modify product packaging and increase transportation efficiency to reduce GHG emissions.

### GHG emissions by Scope (2013)



## WATER CONSERVATION

Some 1.2 billion people live in areas suffering from water scarcity, and it is estimated that by 2025, two-thirds of the world's population will be subject to that same situation (UN). Inefficient use of water resources and non-equal access to water represent one of the world's most pressing sustainable development opportunities. In addition to our concern with water use in our manufacturing processes, Netafim's drip irrigation solutions help the world use water more efficiently in producing the world's food supply. Through our core business, we significantly contribute to global water conservation and water stress alleviation. In addition to supplying drip irrigation systems, we enable the use of wastewater for irrigation, thereby ensuring that our own facilities are as water-efficient as possible.

### SAVING WATER IN AUSTRALIA

In Australia, we have been supporting farmers in taking advantage of the government's Water for the Future initiative, which includes the On-Farm Irrigation Efficiency Program (OFIEP). This is a competitive grant program that funds projects that generate water savings by improving the efficiency and productivity of on-farm irrigation water use and management. We collaborate with the program's delivery partners (organizations and agencies that assist growers in applying for and receiving this funding), and provide cost-efficient drip irrigation systems, service and training support. The program gives farmers access to drip irrigation that they would otherwise not have been able to afford.

### GROWING ALMONDS WITH OFIEP

Australian almond grower Sam Pearce operates six small plots covering a combined area of about 40 hectares. Tough market conditions prevented him from investing in drip irrigation in all but a very small part of his crop area. Before the upgrade to drip irrigation, the almonds had been irrigated by flood irrigation or sprinklers. Due to OFIEP funding, Sam transitioned an additional 17 hectares to subsurface drip irrigation, and the results have been spectacular – improved orchard management, 25% higher average yield, and 30% higher water savings.

"Once you use drippers, the orchard looks after itself. We also use drip for fertigation. We inject fertilizer more frequently than before and in small amounts, rather than applying a large quantity and having some of it go to waste."

Sam Pearce, Almond Grower, Murray Basin, Australia



## USING WASTEWATER IN AGRICULTURE

One major advantage of advanced drip irrigation technology is that it enables the combining of advanced filtration technologies with irrigation. This combination allows for the use of irrigation solutions that source water from effluent waste streams or other brackish water sources, and enables its safe use in irrigation applications. Through our specialized water purification, wastewater treatment and desalination solutions, we expand the possibilities of drip irrigation for many farmers. Additionally, we also enable sourcing of water for irrigation from natural agricultural industry effluent.

Today, wastewater treatment is still far from being applied on a large scale worldwide, and as a result, access to water used for agriculture is limited. With drip, we can use most wastewater types for crop irrigation. In Israel this has become common practice, with some 80% of wastewater used in this fashion. In other countries, the maximum rate of wastewater reuse is 12% (Mekorot, 2009).

## REUSING WATER IN CYPRUS

In Cyprus, we assisted an animal livestock farmer in reusing wastewater. Cyprus suffers from ongoing water shortages, which often affects its agriculture. Our customer, Kirni Pilicleri, the largest poultry manufacturer in the Turkish Republic of Northern Cyprus, operates chicken and livestock production facilities that generate large quantities of wastewater. We developed a solution featuring a treatment system that filters and purifies the wastewater, which is used for subsurface irrigation at a nearby 10-hectare field of alfalfa. The crops were planted with the purpose of providing a feed source for Kirni Pilicleri's livestock.

Part of an efficient, closed-loop drip irrigation process, our solution accommodates low-quality, high-saline wastewater by means of a dilution junction, which blends the wastewater with a precise quantity of clean reservoir water to enable safe agriculture usage. The comprehensive solution also included water tanks, fertilizer-dosing systems, a filtration system, and an automated crop management system.

Using wastewater rather than potable water to irrigate crops for animal feed used in livestock production not only gave our customer an efficient and cost-effective solution, but also contributed to water conservation in Northern Cyprus.

## CONSERVING WATER IN OUR OPERATIONS

We conserve water whenever possible in our factories worldwide, even though our direct consumption of water used in manufacturing is relatively low compared to the water we save our customers through drip irrigation.

Our direct water consumption is primarily used for cooling purposes in the manufacturing process, with a small quantity used for drinking, cooking, hygiene and cleaning. In 2013, we reduced our water consumption per ton of raw materials by 0.3% compared to 2012. We achieved this by intensifying our control of non-production water use, ensuring timely repairs of leaks, and capping excessive water flows. We have also improved the efficiency of our water evaporation towers that form part of our factories' cooling systems. We recycle our own wastewater from our cooling systems whenever possible, for example, by irrigating the green areas around our factories with wastewater. At our Savli, India factory, we reduced water withdrawal by 23% over the last two years, mainly due to the recycling of wastewater for hygiene and gardening. Wastewater is recycled onsite at the factory's treatment plant, which has a daily capacity of 25m<sup>3</sup>. Water may be recycled more than once, contributing to our achievement of overall zero wastewater discharge from the plant.





## MATERIAL USE AND RECYCLING

The main raw material in our operations is polyethylene (PE), which is used for manufacturing dripperlines and emitters. With our ongoing improvements in technology and the reduction of dripperline wall thickness, we can achieve greater efficiency in the amount of raw material used per meter of dripperline.

We use recycled PE in manufacturing our dripperlines. All recycled raw materials undergo strict quality checks, and are confirmed to be suitable for use based on our rigorous standards.

### PROMOTING END-OF-LIFE DRIPPERLINE RECYCLING

We accept shared responsibility with our customers to identify a safe and environmentally-favorable solution for the disposal of end-of-life dripperlines. Many of our thick-walled dripperlines maintain an in-field shelf life of over 15 years, while thin-walled dripperlines, which comprise the majority of our production, need to be replaced either annually or biannually. Dripperlines erode significantly and become contaminated after use, since they are often exposed to extreme weather conditions and soil contamination. We are always looking at various ways to support our customers and protect the environment by enabling the efficient collection of used dripperlines and the suitable reuse of plastic materials after being cleaned and decontaminated.

Dripperline collection is complex and expensive both for the farmer and our operations. They must be removed from the field, packaged and shipped to a safe disposal or recycling center. In addition, regulatory requirements in different countries limit collection and disposal flexibility.

We regularly inform our customers regarding our efforts to collect used dripperlines, and offer financial incentives for their collaboration.

### MAINTAINING LOW-WASTE OPERATIONS

We maintain low-waste operations around the world, focusing on reducing waste levels and increasing the recycling of generated waste. In 2013, we generated about 2,000 metric tons of waste from our production and packaging operations, and recycled almost 70% of that amount. At our Rupchen site in the Netherlands, wood waste from end-of-life pallets is sent for recycling to a biomass burner for electrical production.

In addition, in order to minimize waste we reuse packaging whenever possible. For example, internal packaging used for product shipments between our factories is reused for packing products delivered to our customers.



**70% total waste recycled in 2013**

## COMMUNITY INVESTMENT



With our roots stemming from a communal-based society, the Israeli kibbutz, we understand the value of being part of the communities in which we operate. This is reflected in our monetary and product donations to communities, as well as our extensive employee volunteering activities worldwide. We also support activities that promote efficient use of natural resources, education for sustainability, and local economic empowerment. In 2013, more than 700 employees volunteered over 7,700 hours in community support around the world.

## GROWING COMMUNITY PRODUCE

### CREATING COMMUNITY GARDENS IN ISRAEL

Netafim Israeli employees worked with children from 20 kindergartens in the Arab town of Baqa el-Garbia in northern Israel to create community gardens irrigated by our drip irrigation systems, which we donated for this purpose. The goal of the volunteer project was to educate children about healthier eating choices, and to provide them with an opportunity to grow nutritious food.

### PLANTING KITCHEN GARDENS IN AUSTRALIA



In 2013, Netafim Australia installed a number of drip irrigation systems at school kitchen gardens. Kitchen gardens facilitate food education in an enjoyable way, offering new experiences that fully involve children, parents and teachers. Netafim Australia donated a variety of fruit trees, herbs and irrigation equipment to numerous primary schools. We also trained pupils, parents and staff in the laying out and installing of drip irrigation systems, as well as in carrying out irrigation scheduling and maintenance to achieve optimal performance.

“It was extremely rewarding to see how interested these young students were, and how quickly they understood the importance of saving water and the benefits that can be achieved with drip irrigation.”

Stuart Upton, Marketing Manager, Netafim Australia and New Zealand

### ESTABLISHING AN ORGANIC FARM IN ISRAEL

In 2013, Netafim Israel donated equipment and volunteered to help establish an organic farm in Beit Zayit, a small community near Jerusalem that assists at-risk youth. A private initiative of education and agricultural professionals, the farm was designed as a social enterprise. In addition to generating income to support its employees, the program helps underprivileged youth learn a profession, earn a living and acquire new skills.

Over 40 Netafim employees helped build the farm in two days, during which they prepared the land, created furrows, built a fence, installed drip systems and planted seedlings. We continue to support the farm by providing agricultural and irrigation guidance. The farm began operating in July 2013, and employs 12 teenagers, supplying organic fresh vegetables and fruit to about 60 customers.



## DONATING IRRIGATION KITS

### HELPING ROMA FAMILIES IN HUNGARY

In 2013, Netafim Hungary took part in a community empowerment program initiated by the Israeli Embassy in Hungary. We donated Family Drip System (FDS) kits to 10 Roma families in three villages, while our local dealer, Metra Kft, provided installation support and training. The program is part of a broader program to help disadvantaged Roma families in Hungary become self-sufficient by growing their own vegetables and selling excess produce to increase their income.



### SUPPORTING SMALLHOLDERS IN GEORGIA

We were also involved in a collaborative project providing similar benefits to disadvantaged families in Georgia in 2013. Our partners in the initiative included USAID, the New Economic Opportunities (NEO) Initiative, the Israel's Embassy in Georgia, the Israel Agency for International Development Cooperation (MASHAV), and the Georgian food distribution company Eco Farm. We provided farmers with vegetable seedlings, modern drip irrigation technology, training, and technical assistance in modern vegetable production techniques, and connected them with buyers to help them distribute and sell their harvested vegetables.

The first part of the program comprised of our donating FDS kits to 50 families in the region through our dealer in Georgia, Bar-Lev-Net Group. The group was an active partner in the project, ensuring that the families could use the kits and manage their small-scale crops in order to deliver optimal yields. The families are now growing lettuce and green vegetables, and earning a regular income. Following the success of the initiative's first phase, we are continuing to supply drip irrigation systems to an additional 2,000 families in 2014.

## SUPPORTING AGRICULTURAL DEVELOPMENT

### TRAINING GROWERS IN KENYA

In 2012, Netafim donated 15 Family Drip System kits to the agricultural development project Furrows in the Desert in Kenya.

The program aims to alleviate hunger and poverty in Kenya's arid Turkana region by providing local communities with know-how and tools to cultivate the land and grow their own food. The region is characterized by very low precipitation and infertile soil, and cultivation is not possible without proper irrigation and agricultural expertise. FDS is a suitable solution for these circumstances, since it does not require either electricity or technical knowledge for operation, and irrigates crops with limited water.

Furrows in the Desert was initiated by the Spanish Missionary Community of Saint Paul the Apostle (MCSPA), with support from sustainable farming organizations based in Israel that bring specific expertise gained from cultivating Israel's Arava desert region. Participants live on a farm where they undergo six months of training in cultivation and irrigation skills, learning everything they need to start and maintain their own farm.

At the end of the program, participants receive tools, seeds, pesticides, an FDS kit, a plot of land, and water resources in order to establish a farm. To increase impact, each farmer hires two people to work on the farm, and trains them based on the way he or she was trained. After six months on the farm, the employees can leave to work on their own plot. Program trainers, meanwhile, continue to supervise participants with weekly visits to their farms.

In 2013, we supported the completion of two training cycles with 64 farmers participating in each cycle. Since the project began in July 2012, over 100 Kenyans have been trained and have started their own farms, growing tomatoes, melons, okra and legumes. The program not only enables participants to consume and sell or trade their produce, but also creates a continuous positive cycle of economic and social development by getting more farmers involved over time.

## EDUCATING FOR SUSTAINABLE AGRICULTURE

### PLANTING GARDENS IN SOUTH AFRICA

In 2012, Netafim South Africa partnered with Learn2Live, a non-profit organization dedicated to the development of preschools in poor communities. We helped plant vegetable gardens with tomatoes, carrots, cauliflower, spinach and cabbage in neighborhoods outside of Cape Town that are characterized by high rates of poverty and crime. We installed drip irrigation systems in the towns' preschools, and trained teachers to operate and maintain them. In addition, we created special educational materials to help demonstrate several water saving methods. Netafim volunteers trained the teachers, and regularly helped with gardening and maintenance. We have continued to support this program, and by early 2014, the initiative had reached 37 schools involving over 3,000 preschoolers.

### HOSTING SCHOOLCHILDREN IN ISRAEL

In the 2012-2013 school year, Netafim's Magal factory in Israel hosted 165 fourth graders from five local schools for a one-day experiential trip to our greenhouse park. Our employees developed a unique program for teaching the schoolchildren about sustainable agriculture and irrigation through several experiments and games. The program covered areas such as greenhouse systems, the effect of temperature on different vegetation types, and variations in soil and plant root types.



# GOVERNANCE AND ETHICS

## GOVERNANCE

The highest governing body at Netafim is our Board of Directors, which is comprised of nine members representing Permira and Netafim Hatzetim Holdings, two of Netafim's three shareholders. The third shareholder – Magalron Cooperative Association for Drip and Irrigation Ltd. – has the right to appoint an observer to the Board. The current Chairman of the Board of Directors is Mr. Rudolf Weber. All board members are non-executive and independent (non-shareholding). However, directors appointed by Hatzetim may be deemed as indirect shareholders due to the unique character of the kibbutz organization legal framework governing mutual ownership of assets. This is not considered a conflict of interest, and the long-term success of Netafim Ltd. is a shared objective for all. All directors comply with Israeli legislation regarding conflict of interest of board members. None of the company directors are employed by Netafim Ltd. in any executive capacity. The Netafim Board of Directors maintains one committee, the Audit and Finance Committee, which oversees financial reporting, accounting policies and practices, and associated matters. The Board is advised of Netafim's sustainability performance, and impacts on sustainable productivity throughout its worldwide activities.

## MANAGING SUSTAINABILITY AT NETAFIM

Our sustainability strategy and programs are directed by Netafim's Chief Sustainability Officer (CSO), who reports to the CEO. The CSO works across the entire organization, aligning sustainability aims with global business processes, while interfacing with global business unit heads to embed sustainability principle practices. Progress on sustainability issues is regularly discussed by Netafim's executive management team.



## CREATING AN ETHICAL BUSINESS CULTURE



Netafim strives to do business in an ethical manner, observing a Code of Business Conduct throughout all our global operations. The Code applies to all Netafim employees and directors without exception in relation to all activities, whether internally with colleagues or externally with customers, suppliers, partners, shareholders or other Netafim stakeholders.

Netafim's Code of Business Conduct encompasses a commitment to integrity, provides guidelines for ethical behavior, and defines the responsibilities of employees and managers in safeguarding company assets. It also sets expectations for ethical interactions with external contacts, compliance with the law, mutual respect, responsibility for the community and the environment, and the reporting of ethical breaches.

Netafim first established a Code of Business Conduct in 2006, which was updated in March 2012 following further review and a Board decision, which came after a three-year consultation process with Netafim companies worldwide.

**Ethics training:** In 2012-2013, we implemented a comprehensive ethics training and discussion module, including company-specific ethical dilemmas. Employees throughout the world participated in local training sessions. New employees receive ethics training as part of their orientation, and starting in 2014, must sign our Code of Business Conduct, signifying their understanding and acceptance of it.

**Whistleblower policy:** Netafim's whistleblower policy, which forms part of our Code of Business Conduct, requires all employees to report suspected ethical misconduct of any kind. Such reports are directed to the Netafim General Counsel or the Chief Resources Officer via mail, email or the company's Intranet portal. All submissions are thoroughly investigated, appropriate action is taken, and a report is filed with Netafim's Board of Directors. We ensure that no retaliation is taken against employees who report alleged breaches of the Code of Business Conduct. Our whistleblower policy is available on our website, [www.netafim.com](http://www.netafim.com).

In 2013, five reports of suspected ethical misconduct were lodged via our whistleblower policy. Following an investigation, all matters were addressed, and as a result, three employees were dismissed for ethical misconduct.

**Anti-corruption:** Our commitment to fight corruption and advance anti-corruption practices is embedded in our Code of Business Conduct, and is rooted in the values upon which Netafim was founded. We work to implement this approach throughout our operations worldwide – in our internal dealings among employees and managers, and in our external dealings with partners, suppliers and customers. We observe local anti-corruption laws and regulations such as the UK Anti-Bribery Act and the US Foreign Corrupt Practices Act (FCPA). We ensure that all employees are updated and thoroughly trained to uphold anti-corruption practices.

## RISK MANAGEMENT



We adopt a precautionary approach to our business, and endeavor to identify potential risks in all areas, including environmental and social risks, taking measures to mitigate identified risks whenever possible. In 2013, we created a more robust risk management infrastructure with the establishment of a full-time in-house internal auditor. The auditor works closely with Netafim's third-party auditor to provide recommendations for improving business processes.

In 2013, we started a new process of mapping risks around the company, using an assessment process based on interviews with 50 managers from our operations worldwide. Following an initial assessment, we identified, reviewed and ranked a shortlist of risks based on a survey of all company managers, and then compiled a list of primary risks that will form a 5-year operational safeguarding plan starting in 2014.



# OUR REPORTING



## ABOUT THIS REPORT

This is our second Sustainability Report, and it describes our approach to sustainability and the key actions taken in 2012-2013 to advance responsible and sustainable practices across our global business. The report is designed to provide our stakeholders with a transparent account of our impact on society and the environment. In all cases, data in this report relates to the 2012-2013 calendar years unless otherwise stated. Our last report was published in 2012.

In developing this report, we consulted with, and received feedback from, our primary stakeholders, employees and consumers, as well as from a range of other stakeholders. Our Chief Sustainability Officer and other Netafim executives determined the selection of content for this report. This was based on an assessment of material issues, including those known to be important to stakeholders, and consultations with experts on high-priority sustainability issues, as described in this report.

This report is written in accordance with the Global Reporting Initiative (GRI) G4 sustainability reporting guidelines, at Core level, which we believe represent the most advanced sustainability reporting framework available today. GRI is a non-profit multi-stakeholder organization that acts to increase the level of business transparency through sustainability reporting among companies worldwide. The main tool for assimilating sustainability

reporting is the GRI reporting framework, which contains detailed guidelines for reporting on sustainability, and provides a consistent structure that thousands of companies worldwide use for disclosing their approach and performance related to sustainability. Over 7,000 sustainability reports were published in 2013 by companies throughout the world, many of them using the GRI framework. The most recent version of the GRI framework, G4, was launched in May 2013. For more information, please see: [www.globalreporting.org](http://www.globalreporting.org).

This report is aligned with the principles for defining report content set out in the G4 guidelines. These principles are: Materiality (issues most important to our long-term business growth and stakeholders), Stakeholder Inclusiveness (responding to stakeholder expectations and interests), Sustainability Context (presenting our performance in the wider context of sustainability issues), and Completeness (inclusion of all information that reflects significant economic impacts enabling stakeholders to assess our performance).

We did not seek external assurances for our report due to resource limitations. However, external consultants and reporting experts assisted us in the report preparation and data collection processes, and they internally verified inconsistencies. This report also complies with our commitment to submit an annual Communication on Progress (COP) to the UN Global Compact and to the CEO Water Mandate.

# GRI CONTENT INDEX

## GENERAL STANDARD DISCLOSURES

G4	General Standard Disclosures	Page/Link	External Assurance
<b>STRATEGY AND ANALYSIS</b>			
G4-1	Statement from the most senior decision maker	Message from our CEO, page 3	None
<b>ORGANIZATIONAL PROFILE</b>			
G4-3	Name of the organization	Our Company, page 6	None
G4-4	Primary brands, products and services	Our Company, page 6	None
G4-5	Location of the organization's headquarters	Our Company, page 6	None
G4-6	Number of countries where the organization operates	Our Company, page 6	None
G4-7	Nature of ownership and legal form	Our Company, page 6	None
G4-8	Markets served	Our Company, page 6	None
G4-9	Scale of the organization	Page 69	None
G4-10	Employees	Page 69	None
G4-11	Employees covered by collective bargaining agreements	11% of our employees are covered by collective agreements.	None
G4-12	Supply chain	UNGC LEAD criterion 2, page 79	None
G4-13	Significant changes during the reporting period	Our Company, page 6	None
G4-14	How the precautionary approach is addressed	Risk management, page 64	None
G4-15	Externally developed economic, environmental and social charters, principles, or other initiatives to which the organization subscribes or endorses	Supporting policy for sustainable agriculture, page 39	None
G4-16	Memberships in associations	Supporting policy for sustainable agriculture, page 39	None
<b>IDENTIFIED MATERIAL ASPECTS AND BOUNDARIES</b>			
G4-17	Entities included	Our reporting, page 65	None
G4-18	Process for defining the report content	Our major sustainability impacts, page 10	None
G4-19	Material Aspects	Page 67	None
G4-20	Aspect Boundary within the organization	Page 70	None
G4-21	Aspect Boundary outside the organization	Page 70	None
G4-22	Restatements of information provided in previous reports, and the reasons for such restatements	There are no restatements of information provided in previous reports.	None

G4-23	Report significant changes from previous reporting periods	There are no significant changes in the Scope and Aspect Boundaries from previous reporting periods.	None
<b>STAKEHOLDER ENGAGEMENT</b>			
G4-24	List of stakeholder groups	Defining our stakeholders, page 9	None
G4-25	Basis for identification and selection of stakeholders	Defining our stakeholders, page 9	None
G4-26	Organization's approach to stakeholder engagement indication of whether any of the engagement was undertaken specifically as part of the report preparation process	Expert stakeholder perspectives, page 11	None
G4-27	Report key topics and concerns that have been raised through stakeholder engagement	Our major sustainability impacts, page 10	None
<b>REPORT PROFILE</b>			
G4-28	Reporting period	Our reporting, page 65	None
G4-29	Date of most recent previous report	Our reporting, page 65	None
G4-30	Reporting cycle (e.g. annual, biennial)	Our reporting, page 65	None
G4-31	Provide the contact point for questions	Naty Barak, Chief Sustainability Officer Naty.barak@netafim.com	None
G4-32	a. Report the 'in accordance' option the organization has chosen, b. Report the GRI Content Index for the chosen option (see tables below), c. Report the reference to the External Assurance Report, if the report has been externally assured	This report is in accordance with the G4 guidelines at Core level. GRI content index, page 66	None
G4-33	External assurance for the report	This report has not been externally assured.	None
<b>GOVERNANCE</b>			
G4-34	Report the governance structure of the organization	Governance and ethics, page 62	None
<b>ETHICS AND INTEGRITY</b>			
G4-56	Describe the organization's values, principles, standards and norms of behavior	Our mission, vision, values, page 7	None

## SPECIFIC STANDARD DISCLOSURES

MATERIAL ISSUES (G4-19)	SPECIFIC STANDARD DISCLOSURE MATERIAL ASPECTS (DMA) AND PERFORMANCE INDICATORS	PAGE/LINK	OMISSIONS	EXTERNAL ASSURANCE
MASS ADOPTION OF DRIP IRRIGATION	Indirect economic impacts: G4-EC8 Significant indirect economic impacts	Mass adoption of drip irrigation, page 17		None
ENHANCING CUSTOMER CAPABILITIES	Product and service labeling: G4-PR5 Results of surveys measuring customer satisfaction	Page 76	We do not have surveys measuring customer satisfaction. We consider the number of customer complaints as a measure of customer satisfaction.	None
SUSTAINABLE PRODUCTIVITY	Indirect economic impacts: G4-EC8 Significant indirect economic impacts	Collaborating for a better future, page 31		None
SUPPORTING SUSTAINABLE AGRICULTURE POLICY	Public policy: G4-SO6 Political contributions by country and beneficiary	Netafim does not make political contributions.		None
	Indirect economic impacts: G4-EC8 Significant indirect economic impacts	Supporting policy for sustainable agriculture, page 39		None
EMPLOYEE PERFORMANCE	Employment: G4-LA1 Total number and rates of new employee hires and employee turnover	Page 74	Data reflects 78% of our global workforce. Some data for 2012 is omitted.	None
	Occupational health and safety: G4-LA6 Type of injury and rates of injury, occupational diseases, lost days, absenteeism, and work-related fatalities	Page 75	Absenteeism is not reported. Employee breakdown by gender and employment type are not reported.	None
	Training and education: G4-LA10 Programs for skills management and lifelong learning	Employee performance and development, pages 47-48		None
MATERIAL USE AND RECYCLING	Materials: G4-EN1 Materials used by weight and volume	Not reported	We currently do not report materials data. We plan to report this information in our next report, in 2016.	None
	Products and services: G4-EN28 Percentage of products sold and their packaging materials that are reclaimed by category	Not reported	We currently do not report this data. We plan to report this information in our next report, in 2016.	None
WATER CONSERVATION	Water: G4-EN8 Water withdrawal by source	Page 72		None

**ADDITIONAL DISCLOSURES**

<b>ADDITIONAL PERFORMANCE INDICATORS</b>	<b>CATEGORY, ASPECT, PERFORMANCE INDICATORS</b>	<b>PAGE/LINK</b>	<b>OMISSIONS</b>	<b>EXTERNAL ASSURANCE</b>
G4-EN3	Environmental: Energy: Energy consumption within the organization	Page 71		None
G4-EN5	Environmental: Energy: Energy intensity	Page 71		None
G4-EN6	Environmental: Energy: Reduction of energy consumption	Energy performance, page 53		None
G4-EN15	Environmental: Emissions: Direct greenhouse gas (GHG) emissions (Scope 1)	Page 72		None
G4-EN16	Environmental: Emissions: Energy indirect greenhouse gas (GHG) emissions (Scope 2)	Page 72		None
G4-EN17	Environmental: Emissions: Other indirect greenhouse gas (GHG) emissions (Scope 3)	Page 72		None
G4-EN18	Environmental: Emissions: Greenhouse gas (GHG) emissions intensity	Page 73		None
G4-EN19	Environmental: Emissions: Reduction of greenhouse gas (GHG) emissions	Greenhouse gas emissions, page 54		None
G4-EN23	Environmental: Effluents and waste: Total weight of waste by type and disposal method	Page 73		None
G4-LA9	Social: Training and education: Average hours of training per year per employee	Page 76		None
G4-LA11	Social: Training and education: Percentage of employees receiving regular performance and career development reviews	Page 76	Data is not available for all operations. Breakdown by gender and employee category is unavailable.	None

These disclosures are included for completeness and for the benefit of stakeholders requiring additional data. They are not part of our reporting on material issues.

## PERFORMANCE DATA AND CHARTS

### G4-9 SCALE OF THE ORGANIZATION

- **Total number of employees:** 3,279.
- **Total number of operations:** We operate 16 plants in 12 countries, and maintain 27 subsidiaries and representative offices serving over 110 countries.
- **Net sales/revenues and market capitalization:** As a private company, Netafim does not disclose details of financial performance.
- **Quantity of products or services provided:** Netafim manufactures almost 8 billion meters of dripperlines per year.

### G4-10 EMPLOYEES

FULL-TIME PERMANENT EMPLOYEES BY REGION				
REGION	2010	2011	2012	2013
INDIA	805	907	1,003	971
ISRAEL	774	831	822	977
AMERICAS	352	368	382	445
REST OF WORLD	740	764	787	886
<b>TOTAL</b>	<b>2,671</b>	<b>2,870</b>	<b>2,994</b>	<b>3,279</b>

Notes:

\* We currently do not collect employee data by gender on a global basis.

\* The countries where we have an employee split by gender are: Australia, Brazil, India, Israel, Peru, South Africa and the US. This represents 78% of our global workforce. Among this group, men make up 85% of our workforce and women make up 15%.

**G4-20 INTERNAL ASPECT BOUNDARIES****G4-21 EXTERNAL ASPECT BOUNDARIES**

<b>MATERIAL ISSUES (G-19)</b>	<b>DISCLOSURE MATERIAL ASPECTS (DMA) AND INDICATORS</b>	<b>MATERIAL WITHIN THE ORGANIZATION</b>	<b>MATERIAL OUTSIDE THE ORGANIZATION</b>	<b>RELEVANCE OUTSIDE THE ORGANIZATION</b>
MASS ADOPTION OF DRIP IRRIGATION	Indirect economic impacts: G4-EC8		+	Impacts people and economic development in all markets in which we operate.
ENHANCING CUSTOMER CAPABILITIES	Product and service labeling: G4- PR5		+	Enhancing customer capabilities supports social-economic growth and development.
SUSTAINABLE PRODUCTIVITY	Indirect economic impacts: G4-EC8		+	Sustainable productivity impacts people and economic development in all markets in which we operate.
SUPPORTING SUSTAINABLE AGRICULTURE POLICY	Public policy: G4-SO6		+	Promoting drip irrigation with governments and global organizations increases the rate of uptake of drip irrigation, improving social, economic and environmental impacts.
	Indirect economic impacts: G4-EC8		+	
EMPLOYEE PERFORMANCE	Employment: G4-LA1	+	+	Supporting employee health and safety and investing in their development in the workplace make a social and economic contribution to the communities in which we operate.
	Occupational health and safety: G4-LA6	+	+	
	Training and education: G4-LA10	+	+	
MATERIAL USE AND RECYCLING	Materials: G4-EN1		+	Reducing the consumption of materials within our operations helps minimize our impacts on the planet's resources.
	Products and services: G4-EN28		+	Increasing end-of-life recycling and minimizing waste help reduce the environmental impacts of our products.
WATER CONSERVATION	Water: G4-EN8		+	Reducing water consumption within our operations contributes to addressing water scarcity.

**G4-EN3: ENERGY CONSUMPTION**

<b>FUEL CONSUMPTION FROM NON-RENEWABLE SOURCES IN GIGAJOULES</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>CHANGE FROM 2012 (%)</b>
NATURAL GAS	N/A	1,261	1,444	15%
DIESEL FUEL	25,734	26,763	13,306	-50%
GASOLINE	1,404	8,667	7,946	-8%
LPG	198	557	471	-15%
ETHANOL	N/A	403	594	48%
<b>TOTAL FUEL CONSUMPTION IN GIGAJOULES</b>	<b>27,337</b>	<b>37,650</b>	<b>23,761</b>	<b>-37%</b>

<b>ELECTRICITY PURCHASED FROM GRID IN GIGAJOULES</b>	<b>302,183</b>	<b>328,840</b>	<b>331,188</b>	<b>1%</b>
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<b>TOTAL ENERGY CONSUMPTION IN GIGAJOULES</b>				
FUEL	302,183	37,660	23,761	-37%
ELECTRICITY	302,183	328,840	331,188	1%
<b>TOTAL ENERGY CONSUMPTION IN GIGAJOULES</b>	<b>329,520</b>	<b>366,490</b>	<b>354,949</b>	<b>-3%</b>

Notes:

- \* Data covers all facilities worldwide, except Peru and Spain, where operations commenced in mid-2013. These sites will be included in our next report.
- \* We do not purchase or sell heating, cooling or steam.
- \* All electricity is sourced from grid operations where our sites are located.

**G4-EN5: ENERGY INTENSITY**

<b>ENERGY INTENSITY IN GIGAJOULES PER TON OF RAW MATERIAL</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>CHANGE FROM 2012 (%)</b>
NATURAL GAS	N/A	0.012	0.014	11%
DIESEL FUEL	0.298	0.259	0.125	-52%
GASOLINE	0.016	0.084	0.074	-11%
LPG	0.002	0.005	0.004	-18%
ETHANOL	N/A	0.004	0.006	43%
ELECTRICITY PURCHASED FROM GRID	3.497	3.180	3.102	-2%
<b>ENERGY INTENSITY IN GIGAJOULES PER TON OF RAW MATERIAL</b>	<b>3.81</b>	<b>3.54</b>	<b>3.32</b>	<b>-6%</b>

Notes:

- \* Data covers all facilities worldwide, except Peru and Spain, where operations commenced in mid-2013. These sites will be included in our next report.
- \* Intensity measures are based on emissions reported by Scope in G4-EN3 divided by total plastic raw material input.

**G4-EN8: WATER WITHDRAWAL**

<b>WATER WITHDRAWAL</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>CHANGE FROM 2012 (%)</b>
WATER WITHDRAWAL IN M <sup>3</sup>	111,293	140,450	144,528	3%
WATER INTENSITY IN M <sup>3</sup> PER TON OF RAW MATERIAL	1.29	1.36	1.35	-0.3%

Notes:

- \* Data covers all facilities worldwide, except Peru and Spain, where operations commenced in mid-2013, and Ribeirão Preto, Brazil, where water consumption is not currently measured. We aim to provide information for all sites in our next report.
- \* All our water is sourced from municipal water supplies except at Ribeirão Preto, Brazil, where water is drawn from an onsite well.
- \* Our water intensity ratio is calculated per ton of raw material used.

**G4-EN15: GREENHOUSE GAS EMISSIONS (SCOPE 1)****G4-EN16: GREENHOUSE GAS EMISSIONS (SCOPE 2)****G4-EN17: GREENHOUSE GAS EMISSIONS (SCOPE 3)**

<b>GREENHOUSE GAS EMISSIONS IN TONS CO<sub>2</sub>e</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>CHANGE FROM 2012 (%)</b>
SCOPE 1 DIRECT ENERGY	1,942	2,614	1,623	-38%
SCOPE 2 INDIRECT ENERGY	57,302	63,373	59,605	-6%
TOTAL SCOPE 1&2 GREENHOUSE GAS EMISSIONS	59,244	65,987	61,228	-7%

<b>SCOPE 3 EMISSIONS IN TONS CO<sub>2</sub>e</b>	
BUSINESS AIR TRAVEL	N/A
PRODUCT TRANSPORTATION	40,106
<b>TOTAL SCOPE 3 GREENHOUSE GAS EMISSIONS IN CO<sub>2</sub>e</b>	<b>42,284</b>
<b>TOTAL SCOPE 1, 2 &amp; 3 GREENHOUSE GAS EMISSIONS IN CO<sub>2</sub>e</b>	<b>103,512</b>

Notes:

- \* Data covers all facilities worldwide, except Peru and Spain, where operations commenced in mid-2013. These sites will be included in our next report.
- \* Greenhouse gases included in the calculation of CO<sub>2</sub>e are CO<sub>2</sub>, CH<sub>4</sub> and N<sub>2</sub>O.
- \* Scope 1 emission factors use DEFRA 2013 GHG conversion factors. Scope 2 emission factors use the Israel Electric Company for Israel and IEA for other countries.
- \* Scope 3 emissions are reported for business air travel and for product transportation.
- \* Calculations of emissions from passenger air travel use DEFRA emissions factors for passenger air transportation. Calculations of emissions from product transportation use emissions factors from the EPA Climate Leaders GHG Inventory Protocol.
- \* Data for emissions from business air travel was available for sites representing 89% of production. This excludes South Africa, Australia and Turkey.
- \* Data for emissions from product transportation was available for sites representing 73% of production. This excludes Australia and the US.



**G4-EN18: GREENHOUSE GAS EMISSIONS INTENSITY**

<b>GREENHOUSE GAS EMISSIONS IN TONS CO<sub>2</sub>e PER TON OF RAW MATERIAL</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>CHANGE FROM 2012 (%)</b>
SCOPE 1 DIRECT ENERGY	0.02	0.03	0.02	-40%
SCOPE 2 INDIRECT ENERGY	0.66	0.61	0.56	-9%
TOTAL SCOPE 1&2 GREENHOUSE GAS EMISSIONS INTENSITY	0.69	0.64	0.57	-10%
<b>SCOPE 3 INDIRECT GREENHOUSE GAS EMISSIONS</b>			<b>0.40</b>	

Notes:

- \* Data covers all facilities worldwide, except Peru and Spain, where operations commenced in mid-2013. These sites will be included in our next report.
- \* Intensity measures are based on emissions reported by Scope in G4-EN15 and G4-EN16 divided by total plastic raw material input.

**G4-EN23: WASTE**

<b>TOTAL AMOUNT OF HAZARDOUS AND NON-HAZARDOUS WASTE BY DISPOSAL METHOD IN TONS</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>CHANGE FROM 2012 (%)</b>
REUSE/RECYCLING	663	1,291	1,445	12%
INCINERATION	N/A	83	53	-36%
LANDFILL	362	561	562	0%
OTHER DISPOSAL METHOD	N/A	26	21	-19%
<b>TOTAL HAZARDOUS AND NON-HAZARDOUS WASTE</b>	<b>1,025</b>	<b>1,962</b>	<b>2,081</b>	<b>6%</b>

<b>WASTE INTENSITY PER TON OF RAW MATERIAL</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>CHANGE FROM 2012 (%)</b>
WASTE TO LANDFILL INTENSITY	0.004	0.005	0.005	0%
TOTAL WASTE INTENSITY	0.012	0.019	0.019	0%

Note:

- \* Data covers all facilities worldwide, except Peru, Spain, Australia and our HQ in Tel Aviv. These sites will be included in our next report.

## G4-LA1: LABOR PRACTICES AND DECENT WORK

NEW HIRES BY AGE IN 2013					
	2013		RATE OF NEW HIRES IN 2013 (MALES)	RATE OF NEW HIRES IN 2013 (FEMALES)	TOTAL NEW HIRE RATE (%)
	MALE	FEMALE			
BELOW AGE 30	248	47	9.67%	1.83%	11.51%
AGE 30 - 50	118	40	4.60%	1.56%	6.16%
OVER AGE 50	14	1	0.55%	0.04%	0.59%
<b>TOTAL NEW HIRES</b>	<b>380</b>	<b>88</b>	<b>14.82%</b>	<b>3.43%</b>	<b>18.25%</b>

NEW HIRES BY REGION IN 2013					
	2013		RATE OF NEW HIRES IN 2013 (MALES)	RATE OF NEW HIRES IN 2013 (FEMALES)	TOTAL NEW HIRE RATE (%)
	MALE	FEMALE			
INDIA	153	3	5.97%	0.12%	6.08%
ISRAEL	107	50	4.17%	1.95%	6.12%
AMERICAS	90	32	3.51%	1.25%	4.76%
REST OF WORLD	30	3	1.17%	0.12%	1.29%
<b>TOTAL NEW HIRES</b>	<b>380</b>	<b>88</b>	<b>14.82%</b>	<b>3.43%</b>	<b>18.25%</b>

EMPLOYEE TURNOVER BY AGE IN 2013					
	2013		RATE OF TURNOVER IN 2013 (MALES)	RATE OF TURNOVER IN 2013 (FEMALES)	TOTAL TURNOVER RATE (%)
	MALE	FEMALE			
BELOW AGE 30	238	47	9.28%	1.83%	11.12%
AGE 30 - 50	170	30	6.63%	1.17%	7.80%
OVER AGE 50	32	9	1.25%	0.35%	1.60%
<b>TOTAL TURNOVER</b>	<b>440</b>	<b>86</b>	<b>17.16%</b>	<b>3.35%</b>	<b>20.51%</b>

EMPLOYEE TURNOVER BY REGION IN 2013					
	2013		RATE OF TURNOVER IN 2013 (MALES)	RATE OF TURNOVER IN 2013 (FEMALES)	TOTAL TURNOVER RATE (%)
	MALE	FEMALE			
INDIA	159	6	6.20%	0.23%	6.44%
ISRAEL	180	52	7.02%	2.03%	9.05%
AMERICAS	79	23	3.08%	0.90%	3.98%
REST OF WORLD	22	5	0.86%	0.20%	1.05%
<b>TOTAL TURNOVER</b>	<b>440</b>	<b>86</b>	<b>17.16%</b>	<b>3.35%</b>	<b>20.51%</b>

Note:

\* Data reflects Netafim employees in 7 countries: Australia, Brazil, India, Israel, Peru, South Africa, and the US. This represents 78% of our workforce. Data in countries with less than 70 employees is not reported.

**G4-LA6: OCCUPATIONAL HEALTH AND SAFETY**

INJURIES	INJURIES				INJURY RATE			RATE CHANGE IN 2013 (%)
	2011	2012	2013		2011	2012	2013	
ISRAEL	30	28	32		2.93	2.73	3.22	17.62
INDIA	4	0	5		0.86	0	0.97	N/A
AMERICAS	2	9	22		0.72	2.16	4.89	126.52
REST OF WORLD	4	5	5		2.11	1.95	1.78	-8.88
<b>TOTAL NETAFIM</b>	<b>40</b>	<b>42</b>	<b>64</b>		<b>2.05</b>	<b>1.91</b>	<b>2.86</b>	<b>49.93</b>

LOST DAYS	LOST DAYS				LOST DAY RATE			RATE CHANGE IN 2013 (%)
	2011	2012	2013		2011	2012	2013	
ISRAEL	536	442	707		52.34	43.16	71.06	64.62
INDIA	120	0	9		25.81	0	1.75	N/A
AMERICAS	63	24	63		22.74	5.76	14	143.25
REST OF WORLD	64	15	84		33.85	5.87	29.84	408.57
<b>TOTAL NETAFIM</b>	<b>783</b>	<b>481</b>	<b>863</b>		<b>40.05</b>	<b>21.83</b>	<b>38.54</b>	<b>76.52</b>

## Notes:

- \* Safety data reflects all operations in each country, except for India and Brazil, where safety data is available currently only for manufacturing sites.
- \* Data for 2013 includes our new factory in Recife, Brazil, where operations started in late 2012.
- \* Lost-time injury and lost-workday rates are calculated per 200,000 working hours.
- \* There were no fatalities in our operations in 2013. We regret to report that in 2012 we experienced one fatality: an employee at our Magal plant in Israel was killed during a short bicycle ride from the factory.

**G4-LA9: TRAINING AND EDUCATION**

<b>AVERAGE TRAINING HOURS PER EMPLOYEE IN 2013</b>		
	<b>WOMEN</b>	<b>MEN</b>
MANAGERS	13	30
NON-MANAGERS	2	6
<b>TOTAL</b>	<b>4</b>	<b>11</b>

Note:

\* Training data includes Brazil, India, Peru, and South Africa which represent 39.7% of our global workforce. Training data from other countries is not available at this time.

<b>TRAINING AND DEVELOPMENT IN 2013</b>						
	<b>WOMEN</b>		<b>MEN</b>		<b>TOTAL</b>	
	<b>EMPLOYEES TRAINED</b>	<b>TRAINING HOURS</b>	<b>EMPLOYEES TRAINED</b>	<b>TRAINING HOURS</b>	<b>EMPLOYEES TRAINED</b>	<b>TRAINING HOURS</b>
MANAGERS	11	277	185	6,372	196	6,649
NON-MANAGERS	76	243	878	6,065	954	6,308
<b>TOTAL</b>	<b>87</b>	<b>520</b>	<b>1,063</b>	<b>12,437</b>	<b>1,150</b>	<b>12,957</b>
<b>AVERAGE HOURS OF TRAINING PER PERSON PER YEAR – FULL-TIME PERMANENT EMPLOYEES</b>						<b>9.94</b>

**G4-LA11: TRAINING AND EDUCATION**

<b>EMPLOYEES PARTICIPATING IN PERFORMANCE EVALUATIONS</b>	<b>2012</b>	<b>2013</b>
	90%	88%

Notes:

\* Data reflects global operations.

\* Breakdown by gender and employee category is not available at this time.

**G4-PR5: PRODUCT AND SERVICE LABELING**

<b>CUSTOMER COMPLAINTS (GLOBAL)</b>	<b>2012</b>	<b>2013</b>
<b>TOTAL COMPLAINTS</b>	4,783	5,145
<b>JUSTIFIED COMPLAINTS</b>	171	159

## OUR VALUE CHAIN



Our value chain consists of six stages through which we make an impact and generate value for our stakeholders.

- **Development:** We invest resources in research and development. We employ a team of 50 R&D professionals that constantly works to develop and bring our customers the best, most accessible irrigation solutions to help them grow more, higher-quality produce, while using fewer resources. We collaborate with several academic institutions, agricultural organizations and government offices worldwide to enable knowledge sharing and to support the advancement of research in agriculture and sustainable productivity.
- **Sourcing:** We work with a wide range of suppliers of raw materials, products and services in Israel and abroad with whom we have a long-standing professional relationship. We maintain a collaborative partnership with suppliers, working together on new product development and design improvement.
- **Manufacturing:** We operate 16 plants worldwide. Our manufacturing facilities are located in local markets where they supply irrigation equipment, helping us maintain a cost-efficient distribution infrastructure, and preventing additional transportation-related carbon emissions.
- **Logistics and distribution:** Our local manufacturing and assembly capabilities are complemented by a network of Netafim-owned or qualified-dealer distribution facilities in several countries that supply our irrigation products and systems to dealers representing us in various regions.
- **Customers:** We provide our customers with ongoing technical assistance and support. We work with professional, knowledgeable dealers, and invest many hours in training them in the use and application of our systems, while providing technical and agronomic support directly to customers. In this way, we help increase sustainable productivity in our markets.
- **Community:** We create economic and social value for local communities through our operations and irrigation systems that help farmers grow more, higher quality produce while using less water and energy. This generates financial value for growers, their families and their communities, and reaches consumers worldwide in the form of better fruits and vegetables, reduced environmental impact from agriculture, and greater water availability for personal consumption.

## UN GLOBAL COMPACT

"I reconfirm Netafim's continuing participation in the UN Global Compact. We commit to upholding and promoting the 10 principles of the Global Compact, and supporting broad social, humanitarian and environmental objectives. I reconfirm our intention to maintain our adherence to these principles, and to continue to promote them within our company and with our business partners. Netafim intends to continue to report annually on our progress."

Ran Maidan, CEO



UN GLOBAL COMPACT PRINCIPLES		GRI G4 ASPECTS / DISCLOSURES	NETAFIM APPROACH
1	Businesses should support and respect the protection of internationally proclaimed human rights.	Human Rights	We conduct our business according to the highest ethical standards and respect for human rights. We inform our partners in our supply chain, and encourage them to adopt similar standards.
2	Businesses should ensure that they are not complicit in human rights abuses.	Human Rights Local Communities	
3	Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining.	G4-11 Freedom of Association and Collective Bargaining Labor/Management Relations	We respect the rights of employees to freedom of association and collective bargaining. We support an open culture where all can freely contribute.
4	Businesses should support the elimination of all forms of forced and compulsory labor.	Forced and Compulsory Labor	We do not engage in any practice that could be construed as forced labor. All Netafim employees are employed of their own free will.
5	Businesses should support the effective abolition of child labor.	Child Labor	We respect the rights of children, and we do not employ children in any part of our business.
6	Businesses should support the elimination of discrimination in respect of employment and occupation.	G4-10 Labor Practices and Decent Work	We maintain a policy of equal opportunity and inclusive practices for new and current employees.
7	Businesses should support a precautionary approach to environmental challenges.	Environmental	We adopt environmentally-oriented practices in all our operations, and have established targets to reduce our impacts on the environment. We strongly promote drip irrigation, an environmentally-friendly technology.
8	Businesses should undertake initiatives to promote greater environmental responsibility.	Environmental	
9	Businesses should encourage the development and diffusion of environmentally-friendly technologies.	Environmental	
10	Businesses should work against corruption in all its forms, including extortion and bribery.	Anti-Corruption Public Policy	We are committed to behaving with integrity and act against corruption.

## UN GLOBAL COMPACT LEAD CRITERIA

As part of our commitment to transparent reporting given our membership in the UN Global Compact LEAD group of companies, we also include a cross-reference table for all UNGC LEAD criteria:

CRITERIA	DETAIL	GRI G4 DISCLOSURES	OUR REPORTING
1	Mainstreaming GC principles into corporate functions and business units	G4-1, G4-36	Governance and ethics, page 62
2	Value chain implementation of GC principles	G4-12, G4-PR5, Supplier human rights assessment, supplier assessment for impacts on society	Our value chain, page 77
3	Robust commitments, strategies and policies in the area of human rights	Human Rights Aspects	See our response to UNGC principles 1,2, page 78
4	Effective management systems to integrate human-rights principles	G4-56	Governance and ethics, page 62
5	Effective monitoring and evaluation mechanisms of human-rights integration	G4-HR12	Governance and ethics, page 62
6	Robust commitments, strategies and policies in the area of labor	Labor Practices and Decent Work Aspects, Freedom of Association Aspect, Child Labor Aspect, Forced or Compulsory Labor Aspect	Our employees, page 46 See our response to UNGC principles 2,5 6, page 78
7	Effective management systems to integrate labor principles	Labor Practices and Decent Work Aspects	Employee performance and development, page 47
8	Effective monitoring and evaluation mechanisms of labor-principle integration	Labor Practices and Decent Work Aspects	Performance management, page 48
9	Commitments, strategies and policies in the area of environmental stewardship	Environmental Aspects	Supply chain efficiency, page 51
10	Effective management systems to integrate environmental principles	Environmental Aspects	Supply chain efficiency, pages 51-57
11	Effective monitoring and evaluation mechanisms for environmental stewardship	Environmental Aspects	Supply chain efficiency, pages 51-57
12	Commitments, strategies and policies in the area of anti-corruption	Anti-corruption,compliance	Creating an ethical business culture, page 63
13	Effective management systems to integrate the anti-corruption principle	Anti-corruption,compliance	Creating an ethical business culture, page 63
14	Effective monitoring and evaluation mechanisms for the integration of anti-corruption	G4-SO5, G4-SO11, G4-58	Creating an ethical business culture, page 63
15	Core business contributions to UN goals and issues	G4-1, G4-EC2, Indirect economic impacts, Environmental Aspects, Human Rights Aspects, local communities, anti-corruption	Mass adoption of drip irrigation, page 17
16	Strategic social investments and philanthropy	G4-SO1	Community investment, page 58
17	Advocacy and public engagement	G4-SO6	Supporting policy for sustainable agriculture, page 39
18	Partnerships and collective action	Indirect economic impacts	Collaborating for a better future, page 31
19	CEO commitment and leadership	G4-1	Message from our CEO, page 3
20	Board adoption and oversight	G4-34 , G4-37, G4-43,G4-45, G4-47, G4-48	Governance and ethics, page 62
21	Stakeholder engagement	Stakeholder engagement:G4-24 – G4-27	Our major sustainability impacts, page 10

## CEO WATER MANDATE

Netafim endorsed the UN CEO Water Mandate in 2008, and regularly communicates regarding water performance. This Sustainability Report will serve as Netafim's Communication on Progress (COP) for the CEO Water Mandate Transparency Policy. Netafim's CEO, Ran Maidan, confirms that Netafim continues to endorse and promote the CEO Water Mandate, and will continue to disclose transparently the company's water management performance.

Below is a table showing Netafim's alignment with the six elements of the CEO Water Mandate, cross-referenced, where relevant, to Global Reporting Initiative disclosures.

WATER MANDATE PRINCIPLES		GRI INDICATORS	PAGE REFERENCE
ELEMENT 1	Direct operations	G4-EN8, G4-EN9, G4-EN10	Conserving water in our operations, page 56
ELEMENT 2	Supply chain and watershed management	G4-EN32, G4-EN33	Whenever possible, we encourage our suppliers to adopt sustainable water management practices.
ELEMENT 3	Collective action	G4-16	Supporting policy for sustainable agriculture, page 39
ELEMENT 4	Public policy	G4-SO6	Supporting policy for sustainable agriculture, page 39
ELEMENT 5	Community engagement	SO1	Community investment, page 58
ELEMENT 6	Transparency	G4-28 - G4-33, G4-18, G4-20 - G4-23	Our major sustainability impacts, page 10 Our reporting, page 65 GRI content index: G4-20 - G4-23, page 66



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