

Water



We are committed to the sustainable use of water resources. Changing climatic conditions and rapid alterations in land and water use in many regions, driven by intensifying demand from population growth, dietary changes and economic growth, have increased the threat to the supply, quality and reliability of water for people across the world.

In this section we cover:

- Why water is material to our business
- Mapping our water impacts
- Improving water efficiency in the face of drought
- Embracing international standards
- Supporting smallholders
- Improving waste water quality
- Implementing Water Access, Sanitation and Hygiene (WASH)
- Progress on Olam's goals
- Q&A with Chris Brown, Vice President, Corporate Responsibility and Sustainability



The Republic of Congo.

2015 highlights

- 2020 water targets for Olam plantations and farms achieved by end of 2015 (>10% improvement in blue water intensity)
- Completed two-year term on Steering Committee of UN CEO Water Mandate (key out-put was driving inclusion of SDG on water), also co-sponsoring the Sustainable Agriculture section in the Water Action Hub
- Olam Aviv coffee estate in southern Tanzania is the first African business to be audited against the Alliance for Water Stewardship (AWS) Standard
- 120,000 cocoa, cotton, coffee, sugar, and rice OLC farmers trained in sustainable water management
- Drip irrigation promoted to 7,000 farmers growing chillies, coffee, and sugar in India and black pepper in Vietnam
- IFC, Olam, Solidaridad and Hindustan Unilever Foundation 'Madhu Shree' smallholder sugar programme in India saved over 15 billion litres of water between June 2014 and March 2015
- Improved access to clean water for 15,000 cocoa, coffee, sesame and cotton farmers
- Olam WASH Standard developed for implementation in 2016 by all Olam-managed operations
- Olam SVI's California Tomato operations awarded first place in the OpX Sustainability Excellence in Manufacturing Awards (SEMA) for water conservation efforts

Why water is material to our business

Water sustains all life, so without water there are no crops. According to the UN, water scarcity already affects every continent. Around 1.2 billion people, or almost one-fifth of the world's population, live in areas of physical scarcity, and 500 million people are approaching this situation.

Yet very few governments prioritise agriculture over industries that generate greater currency revenues. If water becomes scarce, it is often farmers who feel it first.

There is therefore added impetus for agribusinesses (like Olam) to take action to ensure the long-term viability of our supply chains and food security around the world. Not only must we consider our vulnerabilities today, but also plan for future scenarios of increased water scarcity, including any measures that governments might take in response. To mitigate these risks, we need action now, both to reduce our own water consumption and also to ensure that other players within our water landscapes are practising responsible water stewardship.

In parallel, we must address issues of clean drinking water and sanitation in emerging markets –for our farmer suppliers and our workforce. According to Water Aid, 1 in 3 people do not have access to adequate sanitation. Meanwhile, the World Health Organization (WHO) estimates that 50% of under-nutrition is associated with infections caused by unsafe water, inadequate sanitation or insufficient hygiene.

Aside from the ethical impetus to address these issues in our supply chains, there is a clear business imperative – healthy people enable greater productivity and increased volumes for our customers.



Mapping our water impacts

Since 2013 we have estimated our water footprint associated with Olam's direct operations, as well as our supply chains through third parties. To do this we have used a combination of primary data for Olam's direct operations and from 2014 we have used the Water Footprint Network's Assessment Tool for our supply chains. For 2015, our water footprint was estimated at 65 billion m³ which equates to almost 26 million Olympic swimming pools.

- 90% of this water is classed as 'green' water
 water from precipitation that is stored in the root zone of the soil and evaporated, transpired or incorporated by plants
- 5% is classed as 'blue water' water that has been sourced from surface or groundwater resources. Key products using blue water are

cotton, grains, rice, almonds, sugar, peanuts and coffee. Only 0.4% of the water footprint is for irrigation in Olam's own plantations and farms

 5% is classed as 'grey water' which is the amount of fresh water required to dilute pollutants to such an extent that the quality of the water remains above agreed water quality standards

The result of our 2015 water footprint is 4,265m³/MT of product, which is 10% less than our 2014 result of 4,758m³/MT.



Total water intensity reduced by 10.4% from 4,758m³ per tonne of product in 2014 to 4,265m³ per tonne of product in 2015. Reduced water used for irrigation in our own plantations, concessions and farms by 25% against our 2013 baseline.

Improving water efficiency in the face of drought

Our California teams continue to grow and source high quality onions, tomatoes, garlic and almonds in the face of drought. This reduced water availability for agriculture has impacted crop yields, raised costs for growers and changed crop competitive dynamics.

Measures taken by the teams include:

- · Taking a forward-looking approach to crop sourcing. Olam Spices and Vegetable Ingredients (SVI) worked with growers in regions that had the best outlook for water security and moved quickly to secure the crops they needed to meet customer demand.
- Maximising technology. For better management of orchard water stress the Almond team continually takes aerial imagery surveys to measure stress levels and the biomass density of the orchard. The images captured help pinpoint any tree stress so they can audit and fix the irrigation design and practices for those specific fields.
- Investing in long-term industry research. The almond industry has independently been heavily involved in water efficiency research since 1992, (well before the current cycle of water shortages). Olam is proud to be part of the Almond Board of California industry group. Its research and recommendations have informed our approach to optimising water efficiency across our 3,300 hectares (ha) of almond orchards, plus 81 ha of pistachios and 121 ha of walnuts in California. These have also been adapted into our almond operations in Australia (over 12,000 ha). Olam is committed to its two key recommendations:
 - Demand-based irrigation: this tracks farm inputs and characteristics such as soil moisture, tree status water and weather conditions. Almond growers in California (which includes Olam) have improved their water use efficiency by approximately 33% since the 1990s



- Assessing almond tree health in California.
- Micro-irrigation: this looks at a precise timing and rate of irrigation to eliminate runoff and ensure that the tree is receiving water directly in its root zone. It has been adopted by 70% of almond growers in California including Olam.
- · Collaborating with multiple stakeholders. Olam SVI has also been an active voice in industry-wide water conservation movements, including support of the UN CEO Water Mandate and collaboration with local California signatories, NGO working groups, and universities.



Tomatoes in California

Embracing international standards

In our 2014 Report we highlighted the approach taken to managing water in our Aviv Coffee plantation in Tanzania. During 2015 we adopted the stepwise methodology shown to align our operations with the requirements of The Alliance for Water Stewardship (AWS) Standard launched by the International Water Stewardship Standard in 2014 to guide and recognise responsible water use and collective action on water risks by private sector water users.

AWS stated that although Olam Aviv was already performing well as a water steward, implementing the standard bolstered our efforts. The full AWS case study can be read here but examples of significant change driven by the Standard include:

- Improved water quality management and pollution control
- Greater ability to demonstrate compliance with the water use permit and protect environmental flow so that activities don't impact on others
- Strengthened approach to Water, Sanitation and Hygiene (WASH) provision at the plantation for our workers, and globally as a result of working through the AWS Standard.

Olam Aviv is also co-investing in the establishment of the Upper Ruvuma Water User Association, which includes representatives from local villages, government and other users to share resources and knowledge for a more co-ordinated strategy.



Trialling the AWS Standard in California

As part of the ongoing challenge to tackle drought in California, Olam SVI advanced their water stewardship efforts via a pilot implementation of the Alliance for Water Stewardship (AWS) Standard. In partnership with WWF and Ecolab, Olam SVI spent the winter of 2014 piloting the Standard at their onion dehydration plant in Firebaugh, California.

Using an in-depth facility tour as a foundation, the cross-industry group explored water use, water stewardship, and its importance within Olam SVI's operations. The following 2 months were spent gathering internal water use data, larger watershed status information, and gaining a greater appreciation for water stewardship efforts in the context of the Central Valley.

Using the WWF Water Risk Filter, Ecolab's Water Monitizer Tool, as well as inner company risk assessments, Olam SVI analysed the collected data in order to better comprehend the water risks facing the food processing industry. As the first food processor in the USA to pilot the Standard, the process animated a stronger understanding of the shared water challenges of the local community as well as Olam SVI's own internal water management strengths and weaknesses. In 2015, Olam SVI continued their commitment by developing an over-arching Olam SVI water stewardship policy for all manufacturing facilities in California. Watch the video at olamgroup.com.

Supporting smallholders

With the impacts of variable rainfall, poor water retention ability of their soil, and often poor access to water infrastructure, smallholders can be at the mercy of scarcity impacts.

Under the Environment Principle of the Olam Livelihood Charter, smallholders receive training on sustainable water management. In 2015, this reached about 120,000 cocoa, cotton, coffee, sugar, and rice farmers (250,000 hectares). Topics include maintaining a buffer zone (not planting nor spraying) near water ways and protected areas; avoiding water wastage; mulching and smart irrigation.

We also promoted drip irrigation for 7,000 farmers across chillies, coffee, and sugar in India and black pepper in Vietnam. Under our social investment programmes (Nigeria cocoa and sesame; Tanzania, Zambia and Zimbabwe cotton, Cameroon and Indonesia coffee) we improved access to clean water for 15,000 farmers through the construction of:

- 15 boreholes and wells
- 1 aqueduct
- 1 gravity water system
- 5 water purification systems.



Mrs Lilabai Bharmu Patil

"Under the Farmer Support Programme – Madhushree, Olam trained us on microentrepreneur development and financial credit management. We started a project providing irrigation in our village. Our success helped our villagers to grow sugarcane and it encouraged new entrepreneurs from my village to develop uncultivated land into cultivated land. My village is now moving towards a model village. Thanks to Olam and its management for the valuable guidance and support."



Water pump in Côte d'Ivoire.

Showing impact over the long-term

India's sweet tooth is well known – it's the world's largest consumer of sugar and the second largest producer after Brazil. Yet sugar is a relatively thirsty crop, so water saving became a key objective of this smallholder programme to improve smallholder productivity and resilience to feed our sugar mill.

Together with our partners, International Finance Corporation (IFC) technical NGO Solidaridad, and Hindustan Unilever, we supported about 17,400 farmers to adopt less water-intensive irrigation systems like drip irrigation, skip furrow and furrow irrigation. They were also trained in how to trash-mulch which uses the old dried leaves of previous crops to supply carbon and nutrients, as well as helping the soil to retain moisture by improving soil physical and chemical property. The water the farmers saved could then be used for intercropping and the growing of accompanying short duration crops to improve incomes.

Water saving results:

A process assurance audit through Grant Thornton confirmed the water savings for the farmers of around 11.5 billion litres from October 2013 to May 2014.

Another audit through E&Y confirmed water savings for the farmers of around 15.14 billion litres from June 2014 to March 2015.

This is a total of 26.64 billion litres of water saved in 18 months, which would fill approximately 10,600 Olympic swimming pools! A reduction of 20% while increasing productivity by 15%. Read more about the success of the 'Madhu Shree' smallholder sugar programme on olamgroup.com.



and trash mulching.



Improving wastewater quality

As an agricultural company it seems obvious to focus on improving the use efficiency of our water sources but we should not overlook the need to focus on the quantity and quality of wastewater arising from our operations.



Effluent treatment plant at our soluble coffee factory in Vietnam.

In our farms and plantations water can run off the surface of the land, washing away valuable top-soil and nutrients, which in turn can then impact on the quality of nearby watercourses. This is why as part of the Olam Plantations, Concessions and Farms Code, we continue to focus not only on water use efficiency but to also incorporate the activities which could affect wastewater quality into our Integrated Water Resource Management plans and our Soil Management Plans.

In our factories we have wastewater quality standards for the water we discharge. This year we have undertaken a wide range of improvement activities in our factories including:

- Improvements to the effluent treatment plant for our onion processing factories in Egypt
- Commissioning an on-site sewage treatment plant at our Cochin spices factory in India, which is capable of handling 60MT/day for the entire domestic effluent generated in the unit
- Commissioning an effluent treatment plant at our Lagos noodle factory in Nigeria from which we will use the treated water for gardening and washroom flushing.

This is all part of our continual improvement programme.

In December 2015, our Arabica coffee processing facility in the Lam Ha district of Vietnam was fined for discharging wastewater that did not meet environmental standards. This part of our operations was contracted to a third party specialist vendor and we demanded immediate corrective actions. Our learning from this incident is to more closely monitor contractors to ensure that they are fully complying with all legislation.



Implementing Water Access, Sanitation and Hygiene (WASH)

We are living in a world where 2.5 billion people lack access to improved sanitation and 748 million people lack access to an improved source of drinking water. As such one of the world's most urgent issues is the lack of safe water, sanitation and hygiene, commonly known as WASH.

In 2011, the UN General Assembly and Human Rights Council agreed to resolutions affirming the Human Right to Water and Sanitation (HRWS) as a right equal to all other human rights.

We recognise that there is a corporate responsibility to conduct business operations consistent with the right to water, but also recognised a need to define what it means in practice for a company to act consistently with this right, and how to operationalise it on the ground, especially in emerging economies or in a farming or plantation environment.

As a member of the UN CEO Water Mandate's Steering Committee, we supported the work on WASH as one of their four priority areas, and also the work which culminated in the creation of Sustainable Development Goal 6: *Clean water and sanitation for all.*

This year we have now taken the step of defining our own 2020 target to provide clear expectations and ensure all of Olam's direct operations, including our farms and plantations, are compliant with our own WASH Standard. As our farms and plantations grow into the next phase of their development, and employee numbers increase, we expect our most difficult ongoing challenge will be ensuring access to safe water and sanitation. This is due to the lack of water and sewerage infrastructure in these rural regions. We have achieved notable successes in tackling these challenge in our coffee farm in Tanzania and we also hope to replicate this in similar farms, but in our larger farms the same solutions may not be transferrable. In response to this we are involved in knowledge-sharing with other companies through the Water Solutions group of the World Business Council for Sustainable Development (WBCSD).



Progress on Olam's goals

Goal 4 covers the sustainable use of water resources. We have introduced one new objective for 2016-2020: Long-term equitable water access and usage.

Some additional context to our objectives and targets

As can be seen from the table, we are delighted that we have been able to deliver our 2020 water goal for Olam's plantations, concessions and farms 5 years early by reducing the amount of water used for irrigation from a 2013 baseline of 5,532m³/MT of product to 4,350m³/MT of product for 2015. We shall determine a revised 2020 target for our own irrigation during 2016.

While we have already hit our targets for 2015 and 2020 for our plantations, concessions and farms we have not achieved the 10% reduction in process water intensity in Olam Tier 1 factories from our 2013 baseline. We need to revisit and determine a revised 2020 target and improvement action plan following two significant changes:

- You can only manage what you measure so we undertook a programme to improve water metering across our Tier 1. We now have a complete picture of our water consumption which shows we consume more than our baseline estimations 2013
- During 2015 our US SVI business undertook a number of improvements and procedural changes to further enhance the food safety requirements set by customers. The trade-off was an increase of water use in production.

2016 - 2020 Objectives	2015 Target	Achieved against 2015 target	2020 Target	Outlook for 2020 target
GOAL 4. Sustainable use of water resources (Material area: Water)				
4.1. Increased water use efficiency in Olam's direct operations	5% reduction in surface and groundwater intensity in Olam-managed plantations, concessions and farms from 2013 baseline.	2015 target achieved.	2020 target achieved. Revised 2020 target to be determined in 2016.	O
	10% reduction in process water intensity in Olam Tier 1 factories from 2013 baseline.	Progress behind schedule. Improved water metering at 100% of factories. Baseline and target to be reviewed in light of improved data from metering and business restructuring.	10% reduction in process water intensity in Olam Tier 1 factories from 2013 baseline. 2020 target to be determined during 2016 following improved water metering and business restructuring.	0
4.2. Increased water use efficiency in priority supply chains	Establish baseline and set target for third-party suppliers.	Progress behind schedule. Olam Livelihood Charter programme water risk mapping in progress.	100% of priority supply chains to have Water Resource Management Plans.	0
4.3. Improved water discharge quality from Olam's direct operations	Establish baseline to minimise the impact of water discharges.	Water discharge limits in place for Olam Tier 1 factories. Olam's Plantations and Farming Community of Practice established to support the development of erosion prevention, nutrient and integrated pollution management programmes.	100% compliance with wastewater discharge limits.	0
4.4. Long-term equitable water access and usage	As new objective, no target set in 2015.		100% of Olam's direct operations in high water risk areas to participate in a water stewardship programme.	+

🗿 On target

+ New

O Started

Q&A with Chris Brown

Vice President, Corporate Responsibility and Sustainability



Chris Brown (centre) and Moray McLeish of the CR&S Function in Madhya Pradesh, India with colleagues from Olam's sugar team and local sugar farmers to see and hear about the improvements achieved in the Madhushree project.

(1) What role is water policy playing in preventing water scarcity?

Given all of the water scarcity challenges we face, you would think that governments would have implemented stronger water policies. It is refreshing to see that California, with its Sustainable Groundwater Management Act, has really taken the bull by the horns. Across the world, we debate water policy issues and spend months discussing the minutiae. But without being joined up across borders, businesses and water basins, it means very little. The last 20 years of deliberation on water policy have yielded very little real impact on the ground.

Why? Water cannot be ring-fenced. We are all guilty of viewing challenges through our own particular lens, assessing impacts and targets based on our own particular silo. But this simply does not work for water.

Water does not respect the boundaries of our administrative systems or the borders of national governments. There are between 250 and 275 transboundary river basins, and at least as many transboundary aquifers globally, yet only 6 of these aquifers have international legal structures that encourage co-operation. Water cannot be siphoned off into its own department, but rather water planning must be a central plank to every policy decision by every department – be that on housing, environment, business or infrastructure. Perhaps even more importantly, these decisions must be consistently reviewed and maintained if they are to have any chance of success. Decisions on water planning can start with good intentions but come unstuck when they are gradually shunted to the bottom of the priority list as time goes on.

We have seen that even when coherent water policies are decided at the top, they often are not cascaded down consistently to the actors on the ground. If the myriad stakeholders in a water landscape aren't brought in at the earliest possible stage to have a voice in assessing the practicalities and application of policy, it is unlikely to stick. Initiatives like the International Water Stewardship Programme (IWaSP) and WWF's Water Stewardship Programme are vital in helping the private sector to collaborate with government departments, other businesses, NGOs and communities across boundaries and borders to protect shared freshwater resources.

Water is infinitely challenging to measure, monitor or mediate. To mitigate these risks, we need action now both to reduce our own water consumption and to ensure that other players within our water landscapes are practising responsible water stewardship – and if we wait for policy-makers to make the first move, it may be too late.

(2) What are your focus areas for 2016?

It is clear that our greatest water risks lie outside our direct operations, in our 3rd party supply chains. So it is no surprise that by far the greatest area of focus is to understand where exactly those water risks exist and implement actions on the ground to address those risks. We shall continue to utilise technology and data sources, such as the World Resources Institute (WRI) Aqueduct Tool, to support us in assessing agricultural

exposure to water stress.

From a smallholder perspective our major focus will be to expand our work on improving water management practices, including better irrigation, new water retention techniques for soils and increasing the number of farmers we train as part of our wider implementation programmes on Climate Smart Agriculture.

Olam's farms and plantations will continue to improve their water efficiency practices on the ground. In addition we will use the Olam Plantations and Farming 'Community of Practice' to share knowledge and leading practices on water management subjects, such as irrigation, water harvesting and soil erosion across our operations. We are also exploring new technologies for the future.

Across Olam's portfolio of factories the Global Engineering Group of the Manufacturing and Technical Services Function will continue to develop and execute Plant Improvement Plans to drive water and wastewater efficiencies.

We will participate in, or if necessary, develop water stewardship programmes to create multi-stakeholder approaches to tackle the broader challenges outside of our operational boundaries when we see risks in our water catchment areas. The involvement of our Californian team as a founder member of the California Water Action Collaborative is a good example of such an approach.

Finally, we will work to identify and implement the necessary solutions to WASH challenges in our farming and plantation operations to deliver not only against our own objective but to contribute towards SDG 6: *Ensure availability and sustainable management of water and sanitation for all.*