WORLDWIDE fruit

Peru Case Study 4:

A Water Stewardship Case Study on

Agricola Chapi

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Context

Retailers and consumers globally are urging the supply chain to enhance its understanding of water usage and promote sustainable practices. Responding to this imperative, Worldwide Fruit Limited (WFL) has agreed to the Courtauld Commitment 2030. Therefore, they actively invested in water stewardship initiatives across their supply base. As part of their commitment, they present a series of case studies from their strategic suppliers growing crops in water-vulnerable regions. These case studies aim to:

- Raise awareness of the current water challenges that growers deal with daily as well as future risks.
- Address the social-ethical impact of crop production in terms of water use and quality on the workforce, local communities and the environment.
- Showcase the initiatives implemented to overcome these challenges along with plans for improving sustainability in the future.
- Share lessons learned and success stories from the suppliers' journeys to sustainability.

This case study represents a Peruvian company, Agricola Chapi, which is a strategic supplier partner of avocado for WFL.

BLUE NORTH
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Report compiled by Malissa Murphy
Blue North Sustainability

Contents & Overview

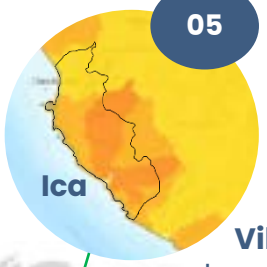
For 25 years, family-owned Agricola Chapi has exported Peru's premium avocados, asparagus, and table grapes globally, **supplying WFL with Ica Valley avocados** for the past five years. Chapi prioritises high-quality production and sustainability, adhering to strict social and environmental standards.

1st in Ica to commit to the AWS Standard

Chapi plans to lead in sustainable agriculture by 2028 with the support of a USD 130 million investment. Their 2024-2027 Water Management Plan focuses on **aquifer recharge, irrigation efficiency, enhancing water access and quality, and community engagement**.

Chapi **acknowledges the water scarcity issue** in the Ica region, highlighting the need for reliable data and improved WASH facilities, The company **disputes the Water Witness report's portrayal of regional environmental practices and expansion plans**, arguing that it overlooks Chapi's achievements in sustainable water management and its adherence to water licenses.

Chapi initiated a **pilot water project** to install elevated tanks in nearby homes.



Despite being a crucial center for avocado production, the Ica region faces severe water challenges due to its desert climate and reliance on the heavily **utilised Ica - Villacuri Aquifer** for irrigation. The dynamic nature of the aquifer makes it difficult to obtain accurate and up-to-date measurements of groundwater use, raising concerns about long-term sustainability. The region also struggles with **inadequate water, sanitation, and hygiene (WASH) services**, further strained by population growth and inefficient infrastructure. Despite recent stabilisation in groundwater levels, ongoing agricultural pressures, coupled with social and **climate challenges,** continue to threaten water security in the region.

Don Ernesto Farm grows **240 hectares of Hass avocados** and delivered **96 tons** to WFL in 2023.

Chapi's use of advanced irrigation and regenerative practices sets a high standard for sustainable agriculture. Their emphasis on partnerships and value chain engagement provides a model for balancing **economic growth with sustainable water management** in Ica.

1. About Agricola Chapi

For 25 years, Agricola Chapi, a family-owned agro-exporter, has been dedicated to bringing Peru's finest agricultural products to the global market. Their products reach America, Europe, Africa, Asia, and Oceania, fulfilling their vision of sharing Peru's rich agricultural bounty worldwide.

Chapi operates in three key regions in Peru: Ica, Casma (Ancash), and Olmos (Lambayeque), covering 816 hectares of avocados, asparagus, and table grapes. Specifically, the Don Ernesto Farm in Ica, spanning 240 hectares, is dedicated to Hass avocado production, supplying 96 tons to WFL in 2023. The packhouse at Doña Julia Farm ensures that all produce is meticulously packed for export.

The company's mission is to maintain a strong presence in agribusiness by delivering high-quality products that meet rigorous social and environmental standards. Their workforce is crucial to this mission, operating in a family-like, safe environment that fosters growth, ensures access to safe water, sanitation, and hygiene (WASH), and promotes overall well-being. Chapi's commitment to regenerative agriculture enhances productivity while ensuring environmental sustainability. Every aspect of their operations, from planting and processing to people-care, is executed precisely to provide top-notch quality.

Chapi has been accredited with various standards, reinforcing its commitment to quality and sustainability.

2. Water Challenges in the Ica Region, Peru

Peru, known for its abundant water resources with 106 river basins and significant annual rainfall, paradoxically faces severe water challenges, particularly in its coastal regions where most agricultural activities are concentrated. Despite being near the equator, the coastal region or Pacific basin, including the Ica region, has a desert climate and only 1.8% of the country's renewable water resources. The steady temperatures of the Pacific basin make it ideal for crop production, such as avocados but also exacerbate water scarcity.

Agricultural Pressure in the Ica Region

The Ica region, nestled within Peru's Pacific basin, has emerged as a vital center for avocado production, despite covering only 1.7% of the country's surface area (OECD, 2021). The region has seen substantial growth in avocado cultivation, expanding from 3,209 hectares in 2017 to 5,428 hectares in 2021 (Agraria.pe, 2022). This growth has established Ica as the fourth-largest avocado-producing area in Peru. Among the key contributors, Chapi manages 240 hectares on its Don Ernesto Farm, playing a significant role in WFL's supply chain.

The Ica River Integrated Basin, which spans the Huancavelica and Ica departments, plays a vital role in supporting the region's agricultural activities, with its water supply sustained by melting glaciers from the Andes. The Ica River nourishes the Ica Valley, where groundwater from the Ica-Villacuri Aquifer serves as the primary source of irrigation. In 2012, the National Water Authority (ANA) noted that the Ica-Villacuri Aquifer was the most heavily utilised in Peru, accounting for 35% of the country's total groundwater use (ANA, 2013). This extensive use has contributed to a reduction in groundwater levels, prompting concerns about the potential for saline intrusion from the coast (ANA, 2013).

Accurately determining the current rate of groundwater usage in the Ica region remains challenging. The aquifer's dynamic nature, with fluctuating water levels across the valley, complicates precise measurements of water use and recharge rates. These complexities highlight the challenges in evaluating the sustainability of groundwater use in this important region.

The Ica Valley is a critical hub for avocado production in Peru.

Despite difficulties in obtaining the most up-to-date data, earlier studies offer valuable insights. According to Salmoral et al. (2020), the blue water footprint (WFblue) of croplands in the Ica Valley, based on 2017 data, primarily relies on groundwater, which constitutes 87% of the total WFblue of 483 Mm^3. Of this, 286 Mm^3 is used at a rate that exceeds the aquifer's recharge capacity. Asparagus and grapes are identified as the largest groundwater consumers, followed by avocado, jojoba, pomegranate, and maize. Although high water productivity is achieved in areas with intensive groundwater use, these areas also face significant sustainability challenges. Modeling suggests that while small-scale farming in peri-urban and middle valley regions shows some sustainability, large-scale farms—which use the majority of groundwater—may contribute less to aquifer recharge. Restoring the water resources used by these farms could take an estimated 3.7 to 5.9 years (Salmoral et al., 2020).

Recent data from the Board of Groundwater Users of the Ica Valley (JUASVI) indicates that groundwater levels have stabilised between 320-380 meters above sea level, alleviating immediate concerns about saline intrusion and suggesting that aquifer reserves may not currently be depleting (Delgado, 2024). However, this stabilisation does not fully eliminate the long-term risks associated with groundwater depletion.

The Choclococha Transfer, a project that has been in place for over 70 years, diverts regulated and natural water resources from the upper Pampas River basin to the Ica River, increasing water availability during the dry season (April-October). This transfer system, which carries over 100 Mm^3 of water annually to the coast, is currently being expanded to reinforce and enhance conveyance infrastructure (Gesaam, 2016). While this transfer supports economic growth and eases some water stress in the valley below, it also has ecological and social impacts on upper basin communities, contributing to ecosystem degradation and water resource challenges.

The Choclococha Canal starts from the Huancavelican lagoons and irrigates the fertile lands of Ica (Source: Infraestructura Peruana).

Additionally, the Ica region faces increasing pressure on its water resources due to a growing population. Over the past 35 years, more than 50,000 immigrants have moved to the area, often settling in informal communities along the Ica River. These settlements, in turn, have led to the extraction of water from unauthorised wells and increased pollution, further stressing the aquifer.

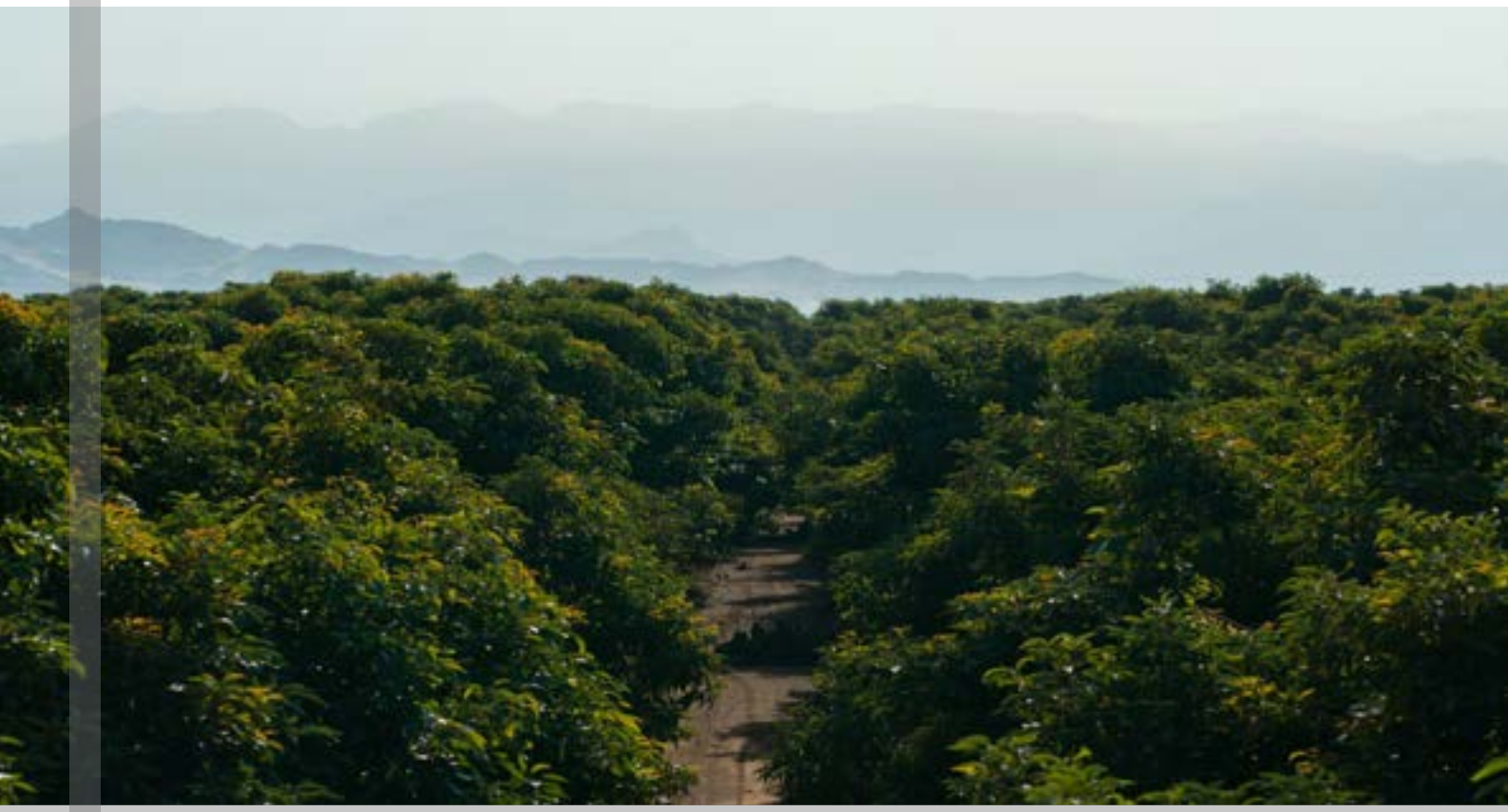
Social Issues and WASH Services

In addition to environmental challenges, the Ica region is grappling with significant social issues, particularly in relation to water, sanitation, and hygiene (WASH) services. Despite efforts to address these gaps, there is still a need for substantial improvements in the state's capacity to manage these services effectively. Limited access to water services is largely due to inefficient state management, infrastructure gaps, and poor maintenance. The influx of immigrants further exacerbates the situation by increasing demand for limited water resources and straining existing infrastructure.

EMAPICA S.A., the local public water utility, faces financial and managerial challenges, which hinder its ability to maintain and expand water infrastructure, especially in terms of wastewater treatment. The current sewerage system, including a wastewater treatment plant built in 1971, was reported in 2018 to be capable of treating only 34% of the current demand (Zegarra, 2018). This shortfall has led to pollution and biodiversity loss in local rivers and canals. The COVID-19 crisis has further underscored the urgent need to improve WASH services.

National Perspective on Water and Sanitation

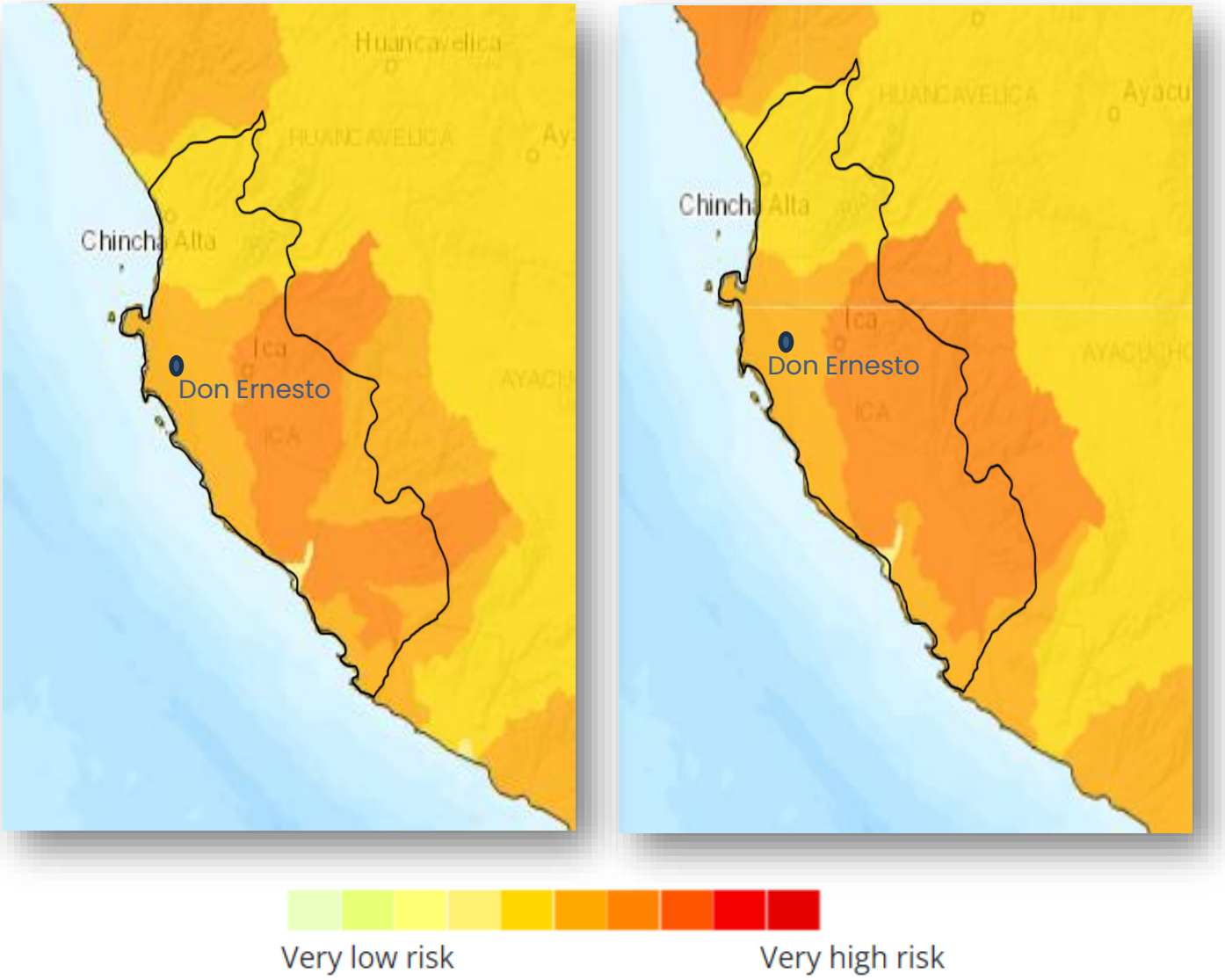
The challenges related to water and sanitation extend beyond the Ica region and are prevalent throughout Peru. An estimated 3 million Peruvians (9.2% of the population) lack access to water services, while 8.2 million (25.2%) lack access to sewerage services (OECD, 2021). There are also significant disparities between urban and rural areas, with 25.3% of the rural population and 4.7% of the urban population lacking access to public water supply networks. Additionally, 22.8% of the population lacks access to public sewerage networks, with rural areas particularly disadvantaged (OECD, 2021).



Climate Change Challenges and Future Risks

Climate change has led to an alarming increase in extreme weather events in Ica over the past two decades, including increased rainfall, floods, and huaycos (flash floods and mudslides). These events complicate water resource management. Climate change further complicates water security with 51% of Peru's glaciers melted over the past 50 years. Predictions suggest further decreases in rainfall by up to 20% in the Andes by 2030, worsening water scarcity.

The WWF's Water Risk Filter states that the Ica region faces high physical risk, encompassing water scarcity, flooding, water quality, and the status of ecosystem services (see the left image below). These risks are projected to worsen by 2030 under current socio-economic development trends and intermediate greenhouse gas emission levels, potentially increasing the global mean surface temperature by approximately 2°C by the end of the century (see the right image below).



Current physical risk (left) and expected risk in 2030 (right) for the Ica region of Peru according to the WWF Water Risk Filter.

3. Chapi's Response to Water and WASH Challenges

In 2020, Chapi developed a roadmap and strategic framework to enhance their responsible management actions. Their sustainability strategy prioritises 11 United Nations Sustainable Development Goals (SDGs) that align with their business practices. Chapi has implemented various water stewardship and other sustainability initiatives crucial to achieving these goals, which are briefly discussed in the following sections.

Scan the QR code to learn more about Chapi's Agroecosystem Roadmap

Chapi's sustainability strategy aims to promote 11 of the United Nation's Sustainable Development Goals.

3.1 Water Stewardship Initiatives

Chapi recognises the critical importance of water for their business and sustainability efforts. For over a decade, they have focused on ensuring long-term water availability, making it accessible in a safe and dignified manner, particularly in their operational areas. Their commitment is rooted in conserving and sustainably using water resources.

Chapi supports governmental leadership in establishing effective water policies and is dedicated to promoting sustainable water management in Ica through cost-effective and relevant measures. They were the first company in Ica to commit to the Alliance for Water Stewardship (AWS) Standard and have been AWS-certified since 2020. Chapi advocates for global and basin-level collective action in sustainable water management, ensuring the human right to safe water.

In collaboration with other companies, the State, local and national water authorities, and the community, Chapi addresses the water and sanitation challenges in Ica. Their commitments include achieving water efficiency, ensuring their activities do not compromise local communities' access to water, and transparently reporting their progress.

Chapi's specific water stewardship commitments include:

- Achieving water use efficiency greater than 99%.
- Running annual induced recharges, aiming to recharge more than 500,000 m³ of water in cooperation with the Water User Boards.
- Complying with monthly water consumption reporting to the National Water Authority.

These commitments are detailed in their 2021-2023 and 2024-2027 Water Management Plan. To safeguard water quality, Chapi adheres to the Water Quality Regulation for Human Consumption and international standards through its AWS and LEAF certifications.

Water Governance

Chapi's water governance is led by a Water Committee comprising senior management and key operational leaders. This committee meets biweekly to discuss water management issues and report decisions to the board of directors. They develop and manage an annual Water Management Plan, which is updated based on historical data and current conditions.

Externally, Chapi engages with various stakeholders, including companies, local authorities, and NGOs, through initiatives like XygnergICA*. They have been involved in projects to conserve water and address water stress in the Ica Valley, working on solutions and infrastructure to support water sustainability.

Water Extraction and Discharge

Chapi manages water extraction through permitted underground wells, sourcing water from the Ica River basin. Advanced technologies monitor water flows and aquifer levels, optimising water use for crop irrigation, phytosanitary applications, and staff consumption. Efficiency is emphasised through soil monitoring and satellite imaging. From 2023 to 2024, the Don Ernesto Farm extracted 8.324 Mm^3 of water (Table 1). During the same period, water discharge from services and laundry facilities amounted to 0.0021 Mm^3 (Table 1).

Table 1. Water extraction (in Mm^3) from wells on Chapi's Don Ernesto Farm for crop irrigation, phytosanitary applications, and staff consumption from 2020 to 2024, and freshwater discharge from services and laundry facilities on the Don Ernesto Farm for 2022 to 2024.

Don Ernesto Farm	2020-2021	2021-2022	2022-2023	2023-2024
Water extraction from wells (Water consumption)	7.761	9.280	7.423	8.324
Water discharge	-	-	0.0020	0.0021

*XygnergICA is formerly known as Southern Committee. Agroexporters that make up XygnergICA: Agrícola Andrea, Agricola Chapi, Agricola Huarmey, Riachuelo Agricola, Campo Andino, Campos del Sur, Don Ricardo, Pedregal, La Portada, Proagro, Agricola 3P, Don Luis, Sunfruits, Uvica, Vanguard Peru (https://www.xynergica.pe/quienes-somos/)

On-Farm Water and Irrigation Monitoring Practices

Drip irrigation is employed for efficient water use on the farm, complemented by a robust on-farm water and irrigation monitoring system. This system includes:

- **Soil Pits and Capacitance Probes:** These tools measure soil moisture levels, providing real-time data that guide irrigation practices. By continuously monitoring soil moisture, Chapi can adjust irrigation schedules to match the precise needs of their crops.
- **SPACEAG System:** Utilising satellite images and aerial photographs, Chapi can observe crop health and identify areas requiring additional analysis. This technology helps detect variations in soil moisture and crop conditions, allowing for targeted irrigation adjustments.
- **Water Level Sensors and Flowmeters:** Wells are equipped with sensors that measure water levels and flow rates, transmitting real-time data to a central system. This setup enables continuous monitoring of water extraction and ensures compliance with legal permits and sustainability goals.
- **Weekly Irrigation Planning:** Based on historical water consumption data and current weather conditions, Chapi develops detailed weekly irrigation plans. These plans are adjusted daily to reflect real-time monitoring results, ensuring optimal water use.
- **Daily Monitoring and Meetings:** The team monitors soil moisture and water consumption daily, holding meetings to analyse the data and plan irrigation for the next day. This practice ensures that irrigation practices are responsive to the immediate needs of the crops.

Drip irrigation (bottom left), weather data from a weather station (top left), and soil moisture level monitoring from soil pits (right) are all crucial components of Chapi's efficient irrigation management system.

Aquifer Recharge

In their efforts to enhance water management, Chapi has implemented afforestation strategies and infrastructure for rainwater harvesting and aquifer recharge. They have collaborated with JUASVI to construct a reservoir for induced recharge and have engaged in water harvesting practices in the Andean regions (Table 2).

Table 2. Aquifer recharge (m^3) in the Ica Valley from 2019* to 2024, with Chapi's involvement.

Operative Unit	2020-2021	2021-2022	2022-2023	2023-2024	Total
Golda Meir	1,159,920	4,082,420	-	-	5,242,340
The Achirana (Don Ernesto)	511,067	235,735	670,338	200,948	1,728,088
Chapi-JUASVI Agreement	-	92,520	157,536	103,154	353,210

*Data for 2019-2020 is not included in the table, but it is factored into the total aquifer recharge amount.

Sharing Water Management Experiences

Chapi has also shared their water management experiences globally. In May 2022, their general manager presented a case study at the Global Water Stewardship Forum, highlighting Chapi's best practices in sustainable water management and its impact on agribusiness in the Ica region.

Sustainable Water Use in the Packhouse

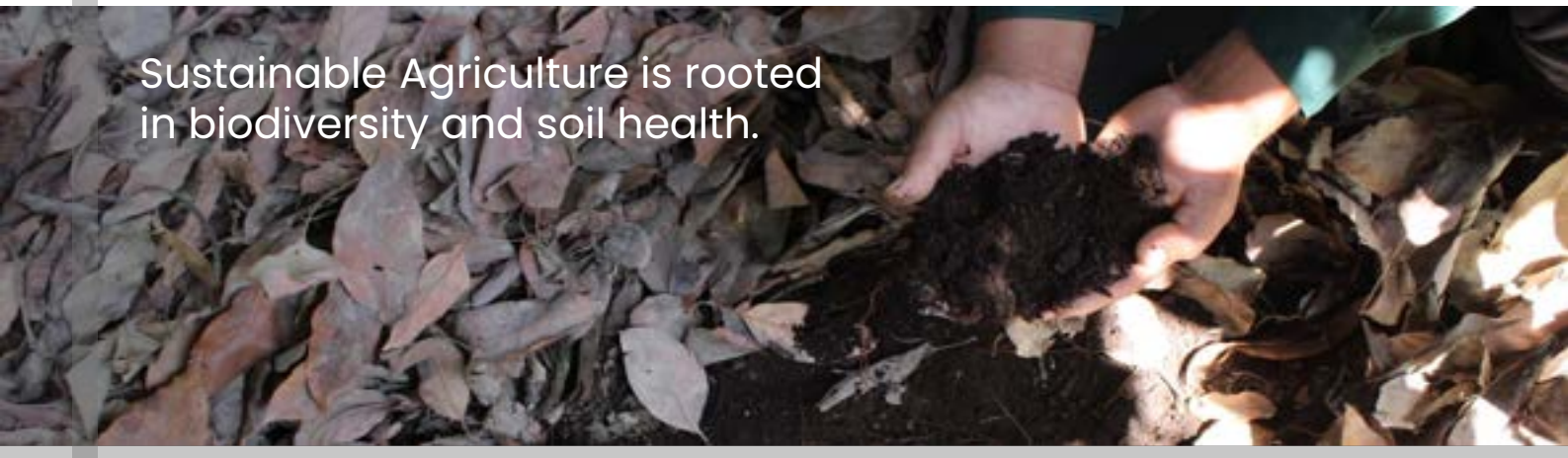
Chapi operates a packhouse at its Dona Julia Farm in Ica. This is where the avocados and table grapes are packed. The packhouse uses approximately 13,000 m^3 of water per year (2024) from wells located on the farm. The water used in the packhouse plant is managed in the most efficient way possible. Cleaning recently changed from washing to wiping with chlorine water, saving the amount of water used significantly.

3.2 Biodiversity Care at Chapi

From the beginning, Chapi has committed to agricultural practices that coexist with and regenerate the environment. Recognising the importance of biodiversity and ecosystems for sustainable agriculture, Chapi integrates agricultural development with natural processes to restore and rejuvenate the earth's resources through several key initiatives:

Taking Care of the Soil

Chapi prioritises the health and sustainability of its agricultural ecosystem by maintaining optimal physical, chemical, and microbiological soil qualities. By keeping the soil free from contaminants and enhancing its organic and biological matter, Chapi ensures a consistent supply of nutrients for crops. The company minimises chemical use by employing soil and crop-friendly biological products where possible, and tailors specific plans based on the characteristics of the farm's soil.



Chapi's Soil Management Plan includes:

- **Regular Soil Analysis:** Conducting physical, chemical, and microbiological analyses to enhance microbial load and soil structure.
- **Cover Crops:** Planting cover crops between rows of newly established avocado orchards.
- **Liquid Organic Matter:** Applying it during appropriate phenological seasons to boost microbial flora.
- **Effective Microorganisms (EM):** Accelerating organic matter decomposition in the soil.
- **Windbreaks:** Protecting soil from wind erosion.
- **Compost and Biochar:** Improving soil structure, chemical properties, and biological components with compost and biochar.
- **Mulching:** Leaving tree pruning material in orchards to retain soil moisture, prevent weeds, and revitalise soil.

Don Ernesto Forest

The Don Ernesto Native Species Forest in Ica, established in 2007, was created as part of the Habitat Restoration and Sustainable Use of Southern Peruvian Dry Forest project. Funded by the Darwin Initiative UK and led by the Royal Botanic Garden's Kew in collaboration with the Horizonte NGO, the project aims to conserve native species, promote pollination, improve soil health, conserve water, and revitalise ecosystems, thereby mitigating climate change effects.

Spanning nearly 10 hectares, the forest initially featured 23 species of native plants. Today, it boasts a diverse structure with four well-defined sectors varying in composition, structure, and distribution. This forest is crucial for ecological restoration, helping to re-establish and conserve species and habitats. Continuous monitoring of flora and fauna informs guidelines and strategies for conservation, recovery, and participatory management.

Scan to learn more about the Don Ernesto Forest.

The latest monitoring in Don Ernesto Forest recorded 689 individuals from 26 species (24 native and 2 endemic).

Chapi “Dique”

The Chapi “Dique” is a natural waterway or canal that flows only during heavy rainfall and runs alongside asparagus fields on the Don Ernesto Farm. Approximately 1.2 km of this waterway has been reforested since January 2015, with numerous native plants, primarily shrubs and some trees, planted along the western side of the canal. This reforestation area serves as a biological corridor for wildlife, which was the project’s primary purpose. Additionally, it helps stabilise the canal's edges against erosion, and its effectiveness has already been demonstrated during past floods. During rainy seasons, wild vegetation, including herbaceous plants, also flourishes within the canal.

Chapi manages a nursery for native species at its Don Ernesto Farm.

Conservation of Native Species

In collaboration with the Royal Botanic Garden's Kew and Sainsbury's UK, Chapi has established a nursery for native species on the Don Ernesto Farm. This nursery serves as a genetic bank to preserve and enhance native species, supporting Chapi's broader commitment to biodiversity and ecological conservation. Additionally, it supplies plants to other companies, schools, municipalities, and the community in general.

3.3 Integrated Pest Management and Responsible Use of Pesticides

Chapi is dedicated to integrated pest management (IPM) through four key pillars: ethological control, cultural control, biological and microbiological control, and chemical control. Crops and traps are monitored daily and weekly to assess pest presence and potential threats, allowing for accurate infestation evaluation and informed decisions on necessary control measures:

- **Ethological Control:** Trapping insects based on their behaviour.
- **Cultural Control:** Moving soil to expose pest eggs and larvae to sunlight, keeping fields weed-free, and removing leftover fruits.
- **Biological and Microbiological Control:** Using predators like Lacewings to control pests such as aphids, spider mites, and whitefly eggs, produced in the Beneficial Insect Reproduction Center.
- **Chemical Control:** Employing pesticides only when pest populations exceed economic thresholds. Chapi avoids extremely and highly dangerous pesticides, using those classified as slightly to moderately dangerous, with strict adherence to dosage and application regulations to minimise environmental and human impact.

Policy for Crop Hygiene and Protection

Chapi's Policy for Crop Hygiene and Protection ensures responsible management and handling of phytosanitary products, protecting human and animal health and caring for the environment. The policy complies with national and international legislation in all countries where Chapi exports its products.

Strategies for Responsible Pesticide Use

Chapi's Crop Health team regularly participates in training sessions on IPM and safe pesticide use to enhance their skills. Their strategies for responsible pesticide use include:

- **Use of Safer Pesticides**: Selecting slightly to moderately dangerous pesticides to reduce toxic effects on people and the environment.
- **Equipment Maintenance and Calibration:** Ensuring application equipment is in good condition and properly calibrated.
- **Protective Equipment:** Requiring full protective gear to minimise contact with pesticides.
- **Innovative Techniques:** Testing new methods, such as drones, for targeted pest control.
- **Chemical Rotation and Dosage Adherence:** Following recommended dosages and rotating chemical groups to prevent pest resistance.

Full protective gear is mandatory when working with pesticides.

3.4 Waste Management

Chapi is dedicated to minimising waste through a comprehensive Waste Management Plan, ensuring high-quality standards and sustainability. The plan is regularly updated, and employees receive ongoing training on waste awareness.

Materials and Recycling

Chapi segregates waste into commercial/recyclable and hazardous/non-commercial categories. Recyclable waste is sold to collection companies, while hazardous waste, mainly pesticide containers, is safely disposed of by certified companies. Non-hazardous containers are repurposed for ethological control traps. Most waste, originating from the packaging plant, is reused before recycling or annual sale if commercially valuable.

Food Waste Management

Chapi manages food waste from production to delivery, addressing contamination issues and collaborating with local institutions to distribute non-exportable food.

3.5 Caring for the People

Chapi is deeply committed to the well-being of its workforce, providing safe, high-quality water and essential WASH (Water, Sanitation, and Hygiene) facilities. With over 1,200 dedicated workers at peak times, Chapi ensures a formal, safe, and welcoming work environment.

On-farm Water and Sanitation

Chapi's focus on safe drinking water and proper sanitation for all employees is guided by their robust 2021-2023 Water Management Plan. This plan has fostered a healthier and more supportive work environment across its farms.

Annual water quality assessments under the plan have resulted in 100% compliance with ECA parameters, ensuring safe drinking water for all employees. Collaboration with JUASVI to map and measure water salinity in the basin and Chapi's wells provided valuable insights, compiled into an annual report on water salinity in the Ica Valley.

To ensure comprehensive water access, Chapi installed safe drinking water points throughout their farms. Additionally, Chapi provides permanent and portable bathrooms, especially during peak seasons, and supports employees with free transportation, food, and health services.

Chapi's 100% compliance with ECA parameters, ensures safe drinking water for all employees.

Community Initiatives

Recognising the broader need for clean water, Chapi has initiated several community projects, despite viewing this as a state responsibility:

- **Pilot Water Project:** Chapi initiated a pilot project to install elevated tanks in nearby homes, providing 24/7 water access to residences that previously had a limited supply.
- **Partnership with NGO Horizonte:** Since 2003, Chapi has focused on agriculture, biodiversity, education, and community well-being, including:
    - **Organic Gardens:** Promoting educational development and environmental awareness in local schools.
    - **Environmental Workshops:** Conducting "Good Water Management" and "Water Culture" workshops.
    - **Collaboration with CAR:** Participating in the Regional Environment Commission (CAR) to address issues like solid waste, water, and forestry.

Top: Chapi installed a water tank at a nearby home as part of a pilot project to ensure continuous access to water. Bottom: Chapi educates the community on growing organic gardens, promoting sustainability and self-sufficiency.

4. Chapi's Response to the Water Witness Report

The Water Witness Report involves a participatory review of Ica's water situation and the effectiveness of current actions. In 2022, a study team of local and international academics, NGOs, and officials from Peru's National Water Authority consulted 34 organisations and interviewed 78 individuals. They visited farms and communities, collected new data, and held workshops to validate their findings, culminating in the report: "How fair is our water footprint in Peru? The role of fresh fruit and vegetable production for export in Ica's water emergency, and lessons for sustainable water use in the global economy."

Chapi disputes the report's portrayal of the region's environmental practices and expansion plans. Their responses to the report include:

Chapi acknowledges the water scarcity in Ica but notes the lack of reliable data among authorities. The urgency of the WASH facility shortage in local settlements is exacerbated by informality. While Chapi ensures its workforce has access to safe WASH facilities, it emphasises that the government is responsible for providing access to the wider community. Chapi believes there is enough water to address this issue effectively.

Chapi finds the Water Witness report unbalanced, as it overlooks their environmental and social/ethical practices. The report focuses on poor practices and the lack of safe WASH without acknowledging efforts to find sustainable water solutions. Chapi's strategy for sustainable water use aims to mitigate negative impacts, and the company is transparent in its actions.

The report's description of Chapi's "apparent environmental credentials" is inaccurate. According to the SGS auditor, Chapi was the first in the Ica region to achieve AWS accreditation and holds the first AWS certificate for avocados and grapes globally. Chapi has successfully passed two audit processes with WSAS.

The report originally incorrectly claimed that Chapi is expanding to 1,000 hectares in Ica. However, Chapi commented on this statement, and the authors agreed to correct it. In reality, Chapi is shifting crops within their permitted water licenses, replacing asparagus with lower water-demand grapes. They are not expanding wells or increasing their licensed water capacity, which has remained the same for the past decade.

5. Future Plans for Chapi

Chapi is steadfast in its commitment to sustainable agriculture, harnessing advanced irrigation technology and regenerative practices to build resilience against climate change. With the support of a USD 130 million loan from Cordiant Capital, Chapi aims to significantly enhance avocado production sustainably by 2028. Their updated Strategic Plan outlines a comprehensive Water Management Plan for 2024 to 2027, which adheres to AWS standards and includes several key initiatives.

The Water Management Plan focuses on aquifer recharge, with a target of infiltrating 50,000 m^3 into Chapi's pozas (ponds) through registered and measured infiltration volumes. To ensure transparency, Chapi will disseminate water management information via a Dashboard annually and publish 12 updates on digital platforms about their water management practices. AWS certification will also be renewed to reflect these efforts. Infrastructure maintenance will involve cleaning and maintaining 100 km of irrigation canals in the Ica Valley each year through JUASVI. Additionally, Chapi plans to improve drinking water access for 10 homes within the community.

In terms of irrigation efficiency, Chapi will continue to employ an operational capacitance probe system to optimise irrigation regimes. Soil protection will be enhanced by maintaining the covering with crushed pruning remains and implementing cover crops. Organic waste management will include the establishment of a composting area and a biochar operation for incorporating organic matter. To further conserve water, the reservoir at Don Julia Farm will be covered to prevent evaporation, and hydraulic infrastructure maintenance will be executed.

Chapi will monitor the water table by conducting monthly measurements of aquifer levels and ensure water quality by performing annual checks to meet ECA parameters. Collaborating with JUASVI, Chapi will also map water salinity in their wells, sharing results and producing an annual report on water salinity in the Ica Valley. Reforestation efforts will include the expansion of 1 hectare of forested areas with native species at Don Ernesto and Don Julia farms to mitigate climate change.

Furthermore, Chapi will continue to ensure reliable drinking water access for all employees at various points on the farm and implement a biofilter wastewater treatment system at Don Ernesto Farm for comprehensive treatment of bathroom wastewater. Community engagement will be strengthened through environmental education programs in local schools, including developing an agroecological garden, a native species forest, and an irrigation system at the Huarango Mocho Educational Institute. Two green areas with native species will also be established at the Pueblo Nuevo Educational Institute.

Through these detailed and ambitious plans, Chapi aims to lead by example in sustainable farming practices, environmental stewardship, and community engagement.

6. Conclusion

Chapi's proactive approach to sustainable agriculture and water stewardship makes them a leading example in the agro-export industry. By integrating cutting-edge irrigation technology with regenerative practices, Chapi enhances avocado productivity while building resilience against climate change. Their Strategic Plan, backed by a significant investment from Cordiant Capital, underscores their commitment to long-term sustainability and innovation.

In the Ica region, balancing economic growth with sustainable water management and social development is challenging. Agricola Chapi's implementation of the AWS Standard and promotion of sustainable practices serve as a model for addressing these issues. However, broader systemic changes are needed to manage water resources efficiently and equitably, benefiting both agriculture and local communities.

A key lesson from Chapi's journey is the importance of partnerships and coordinated efforts. Their involvement in collaborative projects with various stakeholders emphasises the need for a basin-wide approach to water management. Worldwide Fruit Limited (WFL) shares this commitment, ensuring their deep understanding of the ground realities and risks associated with human rights in water-scarce or vulnerable growing regions. WFL's involvement in and support for collective action projects, such as the Ica Water Road Map Project, further demonstrates their dedication to adding value and contributing to the long-term sustainability of these regions.

Chapi recognises that sustainability efforts should extend beyond farmers to the entire value chain. They advocate for engaging consumers and retailers in sustainable practices, such as accepting cosmetic defects on fruit and sourcing from farms with higher standards like AWS certification.

Overall, this case study highlights Chapi's unwavering commitment to sustainability. Through innovative strategies and collaborative efforts, Chapi sets a high standard for the agro-export industry, demonstrating that balancing economic and environmental goals is both possible and essential for long-term success.

Sources:

- All photos, unless otherwise indicated, were acquired from Chapi.
- Agraria.pe. 2022. Peru will have 42 – 45,000 hectares of avocado at the end of 2022.
- Delgado, A.S. 2024. Situation of the Ica Valley Aquifer.
- Gesaam. 2016. Gestión del agua en la cuenca del río Tambo Santiago Ica - Pampas
- OECD. 2021. Water Governance in Peru.
- Salmoral G, Vinarta Carbo, A, Zegarra E, Knox W, Rey D. 2020. Reconciling irrigation demands for agricultural expansión with environmental sustainability – A preliminary assessment for the Ica Valley, Peru. Journal of Cleaner Production.
- Zegarra, E. 2018. "La gestión del agua desde el punto de vista del Nexo entre el agua, la energía y lalimentación en el Perú: Estudio de caso del valle de Ica", CEPAL.