

This is part of a series of case studies that WBCSD has developed to mark the World Water Day 2021, on the theme of valuing water. The case studies showcase examples from a cross-section of WBCSD's membership on how they value water. The aim is to highlight the various dimensions of valuing water and how businesses integrate it into their strategy, operations and decision making.



CASE STUDY 1

Better returns from agriculture and community resilience in water-scarce regions of Southern India



Key driver for valuing water

India is a water-stressed country with major dependence on groundwater for irrigated agriculture. Over 12 million of the total 25 million groundwater blocks in the country are unsafe, saline or polluted for human or agricultural consumption. Summer monsoon rainfall has seen a decline over the years, thus further stressing the available resources. Natems has its operations directly dependent on the sugarcane production most of which is supplied by smallholder farmers around their factories. For the company therefore, the value of water directly translates to impact on their business operations as well as the resilience of communities they work with. Community resilience is further connected to farmer yields, their incomes and ecosystem health. Valuing water is a core part of the company's effort to redefine value and risk. As the 'master variable', water connects company operations, farmer and community welfare, and the health of the surrounding ecosystems. Farmer resilience to water challenges is an essential prerequisite of a sustainable supply chain.

Natems is a sugar company with operations in the South Indian states of Telangana and Andhra Pradesh. Natems was established with the purpose of improving the performance of under-performing sugar manufacturing assets in India. As a result, the company brings leading expertise in sugar manufacturing process together with global finance and management expertise.

Integrated Watershed Management approach and rural credit for better water management

Working with the International Crop Research Institute for Semi-Arid Tropics (ICRISAT), Solidaridad, the Netherlands Enterprise Agency (RVO) and local NGOs, Natems has been working on implementing the Integrated Watershed Management approach around their sugar factory in Hyderabad. The approach helps enhance resource availability by conserving and protecting land and water resources that in turn catalyses crop intensification, production gains and builds community resilience. The approach includes on the following actions and has proven to be a cost-effective solution to hydrological services.

- Indigenous water harvesting structures, nature-based solutions like stream network renovations, with in-field interventions and farmer and community training.
- Evolving appropriate farming systems that can support and increase farm income, crop production and water security.

Natems recognizes its long-term partnership with the farmers who surround their factories, and its aim of bringing financial benefits and stability for farmers reflects in the company's business strategy as well as day-to-day working.

- Monitoring environmental, social and wider economic impact.

Further, in working with farmers around their factory in the state of Andhra Pradesh, Natems worked with rural credit providers to develop and implement an innovative credit platform for provision of drip irrigation. Interest and repayment structures were dependent on tangible increase in crop yield and subsequent improvement in profit for the farmer.

The following principles underline Natems' approach:

Multi-stakeholder: A model that connects private, public, civil society, science & research, farmers and wider communities. Applying knowledge and experiences from proven approaches and best-practice cases.



Science-based: Ensure that all interventions are backed by sound scientific evidence and research, with impact supported by reliable data and monitoring & evaluation.

Innovative extension services and tools: Investing in tools to facilitate changes in behaviour, provide a platform for all stakeholders, and provide logistical solutions for complex operational environments based on the teams' experience in working in 'last-mile' environments globally.

Going beyond volumetric and physical water data: Physical measurements creating storage or assisting groundwater recharge are not enough on their own. Must understand how greater resilience to water risks translates to impact on the business, socio-economic impact amongst the communities, and what this means for the agency of the farmers.

Results and Outcomes

Natems' implementation of the Integrated Watershed management approach yielded positive returns during the pilot phase.

- 250 farmers directly engaged in research activities: Including soil sampling, in-field training and support, seed distribution for climate-smart intercrops and vegetable kits for domestic use, water source monitoring. Has had a positive impact on farmer yields, with some smallholders reporting a 40% yield increase.
- 4500 m³ of storage created, harvesting over 19 million litres

of water in 6 months. Supported regeneration of groundwater supplies, field and domestically.

- Just under 5 km of stream renovated in two villages.
- Impact clearly recognized by farmers with noticeably full open wells. Additionally seen to benefit neighbouring village, replenishing domestic source after years of being empty.

Further, their credit access program for drip irrigation, has produced encouraging results in the last few years (1000 farmers, Investment: USD 500,0000). The water usage for the crop reduced, the yield improved, and net income of the farmer increased on account of increasing yields and reducing input costs.

On an average the impact on all farmers covered, has been reported as the following within 2 years:

- 50% reduction in average water use per acre
- 47% increase in crop yield per acre
- 200% increase in net income per acre per year

The projections made in-line with the results achieved reveal a trend of improving yields and farmer incomes based on reducing water dependence. The value of water is therefore measured in the form of improvement in net incomes, yields and the resilience of farming communities to climate change.

Next steps and lessons learnt

Having developed the foundations and innovative tools, logistical support in place, Natems is planning a significant scale-up of their approach in 2021. With the support of the project partners, they plan to reach all villages within the area. In collaboration with the research partners involved, Natems is also researching the impact their watershed management interventions would have on its business operations.

The key lessons learnt in the process are:

- Investing in water reduces the risk for all stakeholders.
- Having the right tools in place is an essential component for ensuring water management efforts are accurately implemented, and generate sustained and transformative impact that is effectively monitored and evaluated
- Projects must be based on sound scientific evidence not based on assumptions that may not represent the local realities and trade-offs. Poor planning leads to unclear assessments of resilience building.
- The impact of water stewardship must connect to community resilience in a holistic sense and recognize this as an essential pre-requisite for building sustainable value chains. A company should not focus only on impact on water in isolation.

Water usage (% of current average consumption)	45%	50%	45%	50% plus intercrop
% increase in income	60	168	506	527
Impact within year 1 (Return on every rupee for farmer)	1.5	4.22	12.72	13.25
Impact over 5 years (Return on every rupee invested for farmer)	7.5	21.1	63.6	66

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