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MAMBULLY CHANDRASEKHARAN GOPINATHAN
INTERNATIONAL PROGRAMME COORDINATOR (SUGARCANE)



#### **PREFACE**

When I was a child, the lingering sweetness of sugar attracted me. During my academic years, I learnt its ability to help sustain all forms of life through its energy. However, its historic legacy of human sufferings outraged my feelings. During my employment days, I was involved in creating a sustained value for sugar industry stakeholders in India specifically 100 thousand small hold farmer's livelihood makes it better, healthier and sustainable. My association with Solidaridad and Better Sugar Initiative since 2008 inspired me to think solutions and change that matters beyond local to global

With great pride, I share with you this report, informing how Solidaridad has been proactively responding to the global challenge of transforming the sugar sector, making it sustainable. Guided by our vision and mission, the team has been putting relentless efforts to solve the toughest challenges and make the journey fulfilling. All our Regional Expertise Centres (RECs), Global Network and Board were involved in inspiring and enabling us to create a real, positive change that matters to everyone. Direct implementation of the programmes was accomplished by respective RECs located in sugarcane growing areas of South America, Central America, Southern Africa, East & Central Africa and Asia and facilitated by the International Commodity Coordinator. This report is a sincere effort from my sugarcane commodity team to stitch together a decade of results in a simple and inspiring way. We are thankful to all our donors for their consistent and continued support. We are aware that transforming the sugar sector into a sustainable industry is a challenge bigger than any one of us can tackle alone. Your support in collaborative multi-stakeholder partnerships enabled us to make this progress so far. We look forward to scale our partnerships to greater heights. We hope, we haven't missed out any of you in this report. Please accept our sincere apologies, if we have, and please do let us know.

Whether you are a stakeholder of sugar industry, donor, policymakers, investors and a consumer, I hope you will find something interesting and of value in these pages. This report might inspire or prompt you to call us to support or join us to do better. Regardless of how you use this report, I hope it encourages you to contribute, in some way, towards enhancing livelihood of millions of smallholder farmers who grow food for us.

As we move forward, we have a lot to do. But we are well-placed with a decade of learning to inspire, and involve many to traverse a still uncharted path. We look forward to working with all of you for the change that we can create together to make this world a better place to live in for us and our future generations.

#### **FOREWORD**

My first visit to a sugarcane field was in the Dominican Republic. It was 2002. I visited a few bateys small company towns with barracks attached to the sugarcane field. They were filled with seasonal immigrant families from Haiti, facing harsh and unforgiving conditions. The stories and the experience harkened back to the colonial period of the 'white gold' when slaves traded sugar to England.

A year later I gave the kick-off for our first sugar campaign. Soon after, as co-founder of the Better Sugarcane Initiative, the forerunner of what is now Bonsucro, I learnt about Father Hartleys relentless effort to combat human rights violations at the bateys. His experience helped us to draft better the principles of Bonsucro.

In the period 2005 until 2010, I was fortunate to help build this global roundtable with prolific brands, traders, and sugar mills all around the globe. My first sugar mission to India led me to EID Parry's group in Chennai. It was there when I met Dr. Gopinathan. He introduced me to the incredible inventiveness small-scale sugar farmers bring to make their operations more sustainable.

Thanks to Gopi, I then realized the world of sugarcane is bitter and sweet at the same time. Labour conditions are harsh, yet mechanization is rapidly taking over. Burning of cane is still common, yet green harvesting is becoming more popular by the day. As International Programme Coordinator, Dr Gopinathan was able to bring the spirit of innovation throughout our global programme — with significant results.

Glucose and 'glocality' come together in this remarkable manifesto of a decade of local knowledge and practices, linked to a global agenda of smart solutions emerging from a deep understanding of the sugar industry.

The work is not done until the last bateys belong to history, but significant progress has been made. The next ten years will be about systemic change, beyond certification, as the root of the cane plant needs to be straight and just. And there is still a role for Soldaridad to play.

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#### **FOREWORD**

Sugarcane covers around 26.3 million hectares of land worldwide, with a dozen countries using at least 25 percent of their farmland to grow it. Brazil and India are the world's biggest sugarcane producers, accounting for 56 percent of all sugarcane produced in the world. The majority of the sugar farmers are smallholders, and globally, sugarcane industry is one of the biggest employment providers.

However, sugarcane production also faces significant sustainability challenges. The biggest problem is related to water use for sugarcane production. It requires 1,671 litres of water to produce 1 kg sugar (Weighted Global Average), and more than half of the sugarcane farming is through irrigation. In India, the Commission for Agricultural Costs and Prices (CACP) observed that Maharashtra sugarcane cultivation, which takes place in less than 4 percent of the total cropped area, takes away almost 70 percent of the state's irrigation water. There are other challenges like changes in land use, deforestation, degradation of soil and environment approaching a tipping point and threatening sustainable farming.



Managing Trustee of Solidaridad Asia

Solidaridad's sustainable sugarcane programme was one of the largest in the world, spanning four continents and supporting hundreds of thousands of sugarcane farmers. Businesses, governments and nongovernmental organizations (NGOs) did not have a history of working together in the conservative sugarcane sector; Solidaridad's solution-oriented programmes have created such win-win partnerships, that today it has become a norm in the industry.

Solidaridad was one of the co-founders of the certification scheme-Bonsucro. However, it soon realised that while Bonsucro helped raise the bar in the industry, to raise the floor, a beyond-certification approach would be needed. Thus, it introduced tools such as the Indian Sugar Smallholder Sustainability Framework (I3SF), which supports traceable digital supply chains for sugar. Solidaridad has also launched some of the most extensive programmes on demand-side water conservation and introduced many state-of-the-art Dutch and Israeli technologies for water-efficient sugarcane farming.

As we move forward, Solidaridad sincerely believes that progressive sugarcane farmers can meet the increasing demand for sugar through sustainable agricultural practices. However, they would need support – the sustainable growth of the sugarcane industry requires extensive collaboration between farmers, mills, end-user companies and the civil society actors. I hope our decade-long learning in the sugar industry, very adequately highlighted in the report, provides food for thought for industry stakeholders to chalk out the next generation of sustainable development in the sector.

#### **SUMMARY**

The sugarcane value chain continues to face sustainability related challenges that Solidaridad and other industry stakeholders are trying to overcome. Better Sugar Initiative (now Bonsucro) is a step in that direction. Efforts have been made to transform Bonsucro into a mainstream global organization by actively participating in the Board and facilitating standards, pilot projects and capacity building of mills along with helping the farmers to get certifications for sugar and ethanol production.

Solidaridad has also been addressing other locally relevant and globally challenging issues relating to water, soil health, climate change, productivity, profitability and smallholder livelihoods. Furthermore, resources have also been invested in designing, developing and implementing more than 26 sustainability programmes in 19 sugarcane growing countries, which represents 74 percent of sugarcane production. All our Regional Expertise Centres (RECs), Global Network and Board were involved in enabling sustainable sugarcane value chain. However, the implementation of the actual programme rested mainly on RECs, which are located in sugarcane growing areas of South America, Central America, Southern Africa, Central Africa and Asia. The programme was facilitated by the International Programme Coordinator, while its financial support came from more than 42 donors in 12 countries.

We were able to develop 86 direct programme partnerships (bi, tri and multilateral) with mills, farmer associations, sugar and beverage companies, agri input companies, financial institutions, civil society organizations, universities, research institutes and service providers. So far, the programme has brought 1,283,194 hectares under sustainable production involving 75 sugar mills and more than 400,000 farmers in 19 countries.

Our capacity building programmes have facilitated 425,342 farmers who receive a multifaceted array of training on sustainable production, benchmarking, certification, financial literacy, water efficiency, productivity and profitability. On an average the improvement in their productivity ranges from 10 percent to 20 percent. We have aided 33 mills and two farmer associations to obtain Bonsucro certification and 15 farmers in getting RSB-certified. We have also facilitated 84 farmers' associations to improve their competitiveness by enhancing their technical and managerial capabilities. Among individual workers, as many as 142,945 have been trained in issues relating to safety, health and labour rights. Given the job losses due to mechanization in the sector, we retrained some workers to help them find alternative jobs.

Many of our partner companies and farmer associations have received national and international recognition and awards for adopting sustainable sugarcane growing practices.



#### **LEARNINGS**

- The sugarcane value chain is highly complex and very sensitive to external influences.
- Certification is important, but not sufficient to provide solutions to some of the most critical challenges of production.
- Beyond certification, the sugarcane sector requires locally relevant solutions for transforming and enhancing the livelihood of the farmers.
- Sector transformation requires alternate approaches to sugarcane production with increased investments...
- Value chain partnerships, involving multiple stakeholders, are critical for resource pooling, faster work and scaling up.
- Affordable fourth generation revolutionary technologies can transform the sector better and faster.

#### **SUGAR INDUSTRY: A GLIMPSE**

Sugar is one of the oldest commodities in the world, 80 percent of which is produced from sugarcane in the tropics and the rest from sugar beet in the temperate zones. In addition to providing basic food for energy, it is also used as a sweetener and preservative for beverages, food and industrial products. Historically, its production and trade have brought about sociopolitical and economic transformation in several parts of the world. Even today, sugar industry is a major job provider and contributes significantly to government revenue, economic development and poverty alleviation. Due to its socioeconomic importance, sugar continues to be one of the most politically protected commodities with serious policy distortions.

100+
PRODUCER
COUNTRIES

65
COUNTRIES
PRODUCE FROM
SUGARCANE

40 COUNTRIES PRODUCE FROM SUGAR BEET 10 COUNTRIES PRODUCE FROM BOTH

### **GLOBAL FIGURES**

2018/19

179

MILLION TONNES PRODUCED¹

+\$73

**BILLION REVENUE** 

100

MILLION LIVELIHOODS SUPPORTED<sup>3</sup>

+1600

ENTERPRISES

+2500

MILLS AND REFINERIES

#### **GLOBAL PRODUCTION**

70%

DEVELOPING
COUNTRIES

EXPECTED TO GROW AT

1% ANNUALLY<sup>2</sup>

30%

REST IS DOMESTICALLY

OF EXPORT
THROUGH BILATERAL
AGREEMENTS

10% of trade through commodity exchange

#### **REVENUE**

51% FROM FOOD AND BEVERAGE MANUFACTURERS



25% FROM GROCERY WHOLESALERS AND SUPERMARKETS



24% FROM NON-FOOD USERS SUCH AS ENERGY COMPANIES





## **COMMODITY TRADE DATA FOR TOP 12 COUNTRIES<sup>4</sup>** Others 34% Historic Sugar Production (X3.000Mronnes) ¥50000 Others 200000 150000 CONSUMPTION 100-Dina Dic 25 LONGSTO of Adminis Patricipal Brazil 35% EXPORT5 Gestiones 35 Medica Ma

#### **SUGARCANE**

Sugarcane is a very complex commodity with its production in diverse agro-climatic conditions threaded into the socioeconomic fabric of almost every country. It is estimated that in the developing countries 60 million smallholder farmers depend upon sugarcane for their livelihoods<sup>3</sup>. Their farms ranging from one to two hectares are responsible for 40 percent of the total sugarcane production, while the rest comes from in large industrial plantations. Sugarcane's competitive landscape has been changing lately because of its use as a feedstock for power, alcohol, biofuels, biopolymers and biopharmaceuticals..

60

MILLION SMALL HOLDERS
DEPEND ON CANE FOR THEIR
LIVELIHOODS IN DEVELOPING
COUNTRIES

26%

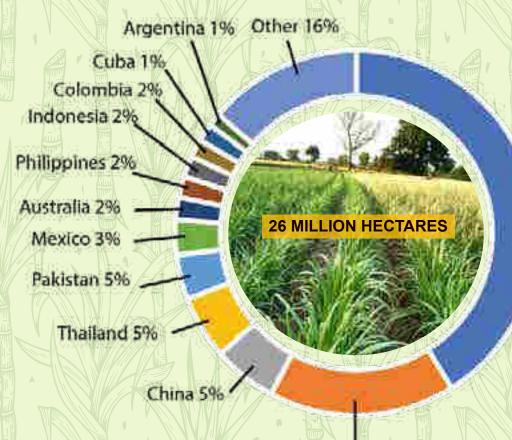
RENEWABLE FUEL FROM SUGARCANE ETHANOL 5

25%

OF POWER DEMAND CAN BE MET FROM CO-GENERATION OF BAGASSE<sup>6</sup>



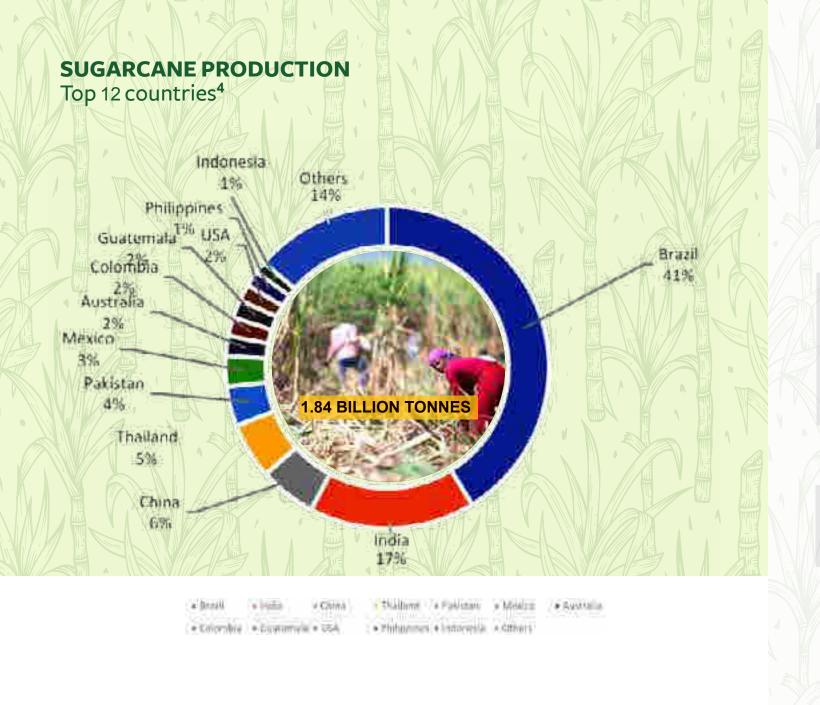




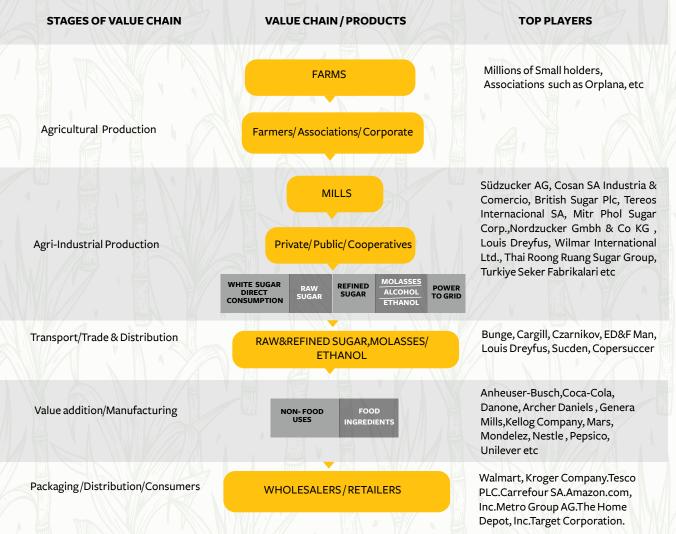
India 17%

Brazil

39%



#### THE SUGARCANE VALUE CHAIN<sup>7</sup>





Asia, Australia and tropical parts of Africa are particularly vulnerable as sugarcane is cultivated there mainly on irrigated land where unsustainable use of water would strain aquifers and the normal flows of rivers. If the current trend continues in these regions, most of the ground water resources will reach a critical state of degradation. Furthermore, approximately 31 percent of sugarcane is grown in extremely water-stressed regions that face intense competition for water from other crops, maintenance of ecosystems, human settlements and industry.

Water scarcity has already given rise to several political conflicts around the world, and in the coming years they are expected to rise particularly in regional hotspots. This will bring sugarcane cultivation under severe public scrutiny for its water usage and policy framework. There are no additional water sources to divert for sugarcane cultivation, which is likely to affect its production unless water usage is minimized, and productivity maximized.

1,671 litres of water is required to produce 1 kg sugar7 (Weighted Global Average)

31 percent of production are under water stress

54 percent of global area is irrigated <sup>7</sup>

#### **SUSTAINABILTY: MAJOR CHALLENGES**

**Environmental Degradation** 



Sugarcane cultivation is also associated with degradation of land, loss of organic matter, acidification of soil and overall deterioration of soil security8. Excess use of nutrients and pesticides often results in soil, water and air pollution, deficiencies of micronutrients, high susceptibility to diseases and pests along with an impact on human health. Removal of crop residues or their in-situ burning along with the absence or insufficient addition of organic manures and monoculture of sugarcane are also harmful to the soil. They cause depletion of organic carbon in the soil (SOC), which is a vital element required for soil's biological activity besides carbon storage. In India and in the tropical areas of Africa, the levels of organic carbon in the soil have reduced to less than 0.5 percent, making it impossible to cultivate without the use of synthetics. Further, it has been widely recognized that SOC sequestration can be of great importance for mitigating climate change and improving soil fertility and productivity. In many countries, sugarcane fields are burned before or after harvesting, which leads to air pollution and greenhouse gas emissions.

#### **SUSTAINABILTY: MAJOR CHALLENGES**

#### **Climate Change Impacts**

Weather and climate are the key factors impacting sugarcane production. High temperatures, large rainfall variability and frequent occurrence of droughts, wildfires and floods cause substantial loss of productivity. This affects the the small farmers the most as their farming systems are not resilient enough to deal with such extreme weather events. Possible rise in crop failures could harm the already fragile livelihoods of these farmers.

#### SUSTAINABILTY: MAJOR CHALLENGES

**Managing Human Rights Issues** 

Besides environmental concerns, sugarcane sector is also plagued by issues relating to human rights, workers' health and social exclusion. Sugarcane is a labour-intensive crop with workers required at every step, including soil preparation, planting, pesticide application, weeding and harvesting. Be it self-employed, unpaid family, contractual or salaried, the nature of employment varies from country to country depending on the size and ownership pattern of the farms.



#### **SUSTAINABILTY: MAJOR CHALLENGES**

#### **Ensuring Small Holder Livelihoods**



There are about 60 million smallholder sugarcane farmers in Asia, Africa and Latin America, who contribute 40 percent of the global production. In addition to lack of resource and low productivity, they are also vulnerable to the changes in sugar prices, which are highly volatile. Owing to cyclical production of the crop, even minor shifts in production affect the sugarcane price in a major way. It is no wonder that the overall productivity and profitability of sugarcane farming are also in decline.

Farming profitability is hindered by the access to knowledge, finance and timely inputs. Smallholders have become more vulnerable due to the growing competition for land and water, rising input prices, climate change and yield shocks. This traps them in perpetual poverty as agrarian distress continues to engulf livelihoods of millions of farmers.

In several countries, sugarcane is cultivated on the land with tenure arrangements, which are risky. In Cambodia, Laos and some other Latin American and South African countries, land and property rights are unclear or remain unenforced, leading to land tenure conflicts among farmers. Also, expansion of sugarcane cultivation of large plantations displaces small farmers and results in confrontations between the two.

During the whole process of sugarcane production, women play a vital role in small-scale farmers' holdings and participate as a farmer, worker and entrepreneur. Their roles and efforts vary widely across regions and countries and depend upon several factors, including their age, social and religious background and the phase of the crop. However, their contribution receives limited recognition, a possible reason for young women not attracted to farming.



## Solidaridad

#### **ABOUT US**

In everything we do, we are driven by our vision and mission. We seek partnerships with others, collaborate with industries and aspire to be a financially sustainable organization. We will always ensure that what we contribute to our vision of a sustainable and inclusive economy that maximizes benefit for all.

#### **VISION**

Solidaridad envisions a world in which all we produce, and all we consume, can sustain us while respecting the planet, each other and the next generations.

#### **MISSION**

Our mission is to bring together supply chain players and engage them with innovative solutions to improve production, ensuring the transition to a sustainable and inclusive economy that maximizes benefit for all.

Our journey began in 1969, at a time when social protests worldwide were starting to tear down the old, traditional socio-economic and political structures. With lessons learnt from 50 year-long experience of our worldwide operations, we continue to work as a solution-oriented civil society organization bringing sustainability solutions to 'speed and scale', and accelerating transition towards a sustainable and inclusive society.

We are an international network organization with nine regional offices across five continents and 720 employees operating in 41 countries and working on 13 commodities.

We partner with hundreds of players of all forms and sizes from across global supply chains, from local producers and associations, and supply chain service and input providers to governments, civil society, policy and decision-makers, CSR leaders, leading global brands and consumers.

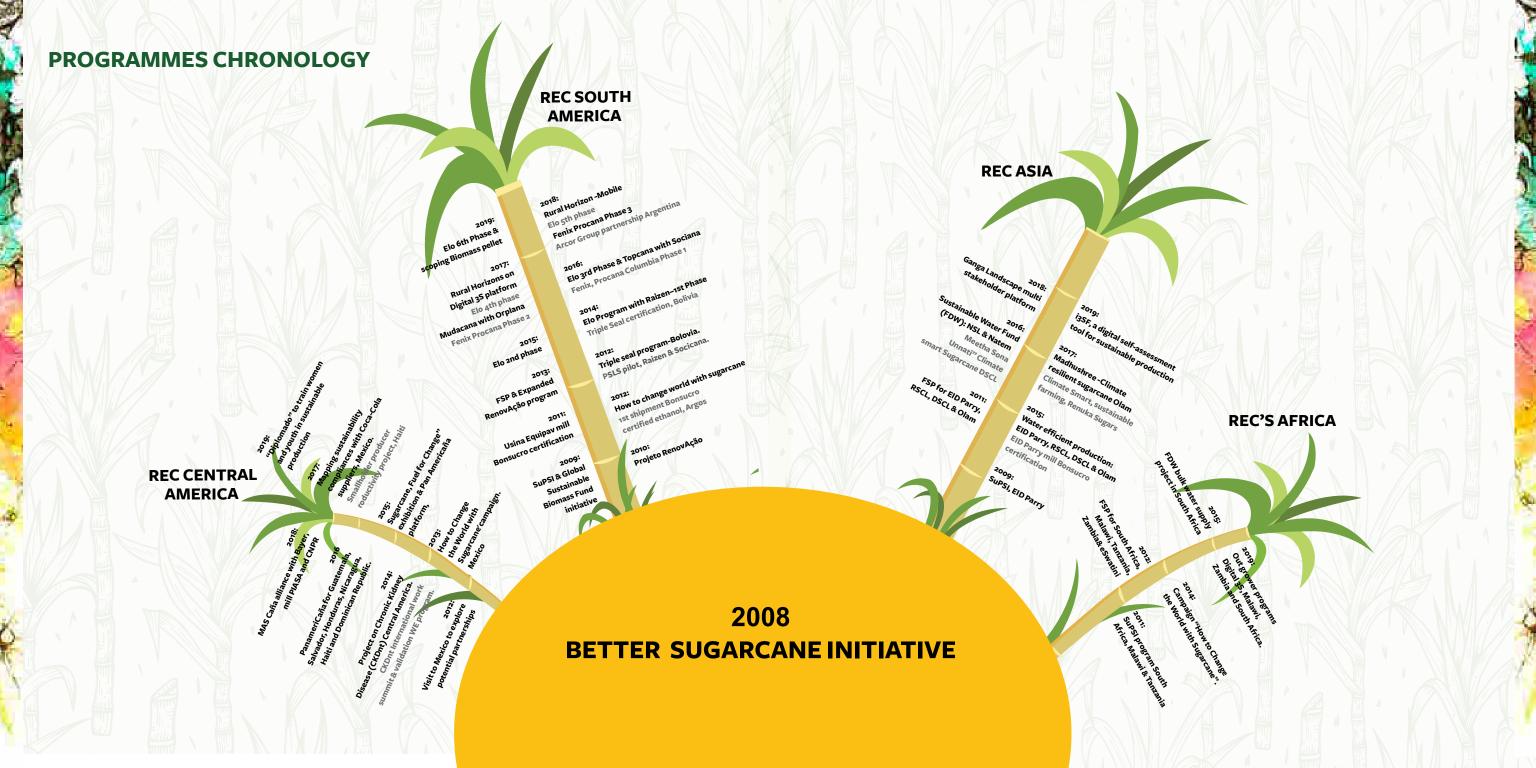
#### **13 GLOBAL COMMODITIES**



21 donor countries, 8 regions, 13 global communities, 720 staff, 452 companies and 121 government agencies

2C





#### **PROGRAMMES IN BRIEF**

- 1. Beyond round tables sustainable sugar (2006-2019). Transforming "better sugar: better business", meeting to a Better sugar Initiative and then to Bonsucro - a mainstream global sugar cane sustainability organization - with our brains, boots and support..
- 2. Sugar Producer Support Initiative or SUPSI (2009-2012): Community business support centres and bioenergy awareness programme in Brazil and South Africa and better management practices for smallholders in India and Malawi.
- 3. Real Benefit Sharing (2009-2013): Sustainability of cane ethanol through Global Biomass Fund Initiative-Brazil. Retraining of redundant cane cutters, capacity building and support to farmers through PSLT, assessment, facilitation of production and shipment of first Bonsucro-certified traceable ethanol from the Equipav mill to Rotterdam.
- 4. Everyone drives on alcohol (2009-12). A slogan for creating, awareness and enabling production of ethanol fuel from sugar cane globally.
- 5. "Children Out of Fields in Schools" and sustainable production Bolivia (2009-2012). Child free cane production and expanded multidisciplinary tri-national sugarcane platform to six sugar cane mills, in Paraguay, Bolivia and Argentina leading Guabirá mill the Triple Seal certification.
- 6. Farmer Support Programme (2011-2016): It demonstrated the business case for sustainable production by capacity building to accelerate sector and market transformation. Eleven projects were implemented in 10 countries (India, Pakistan, Honduras,







Belize, Mexico, Brazil, Swaziland, South Africa, Tanzania and Malawi).

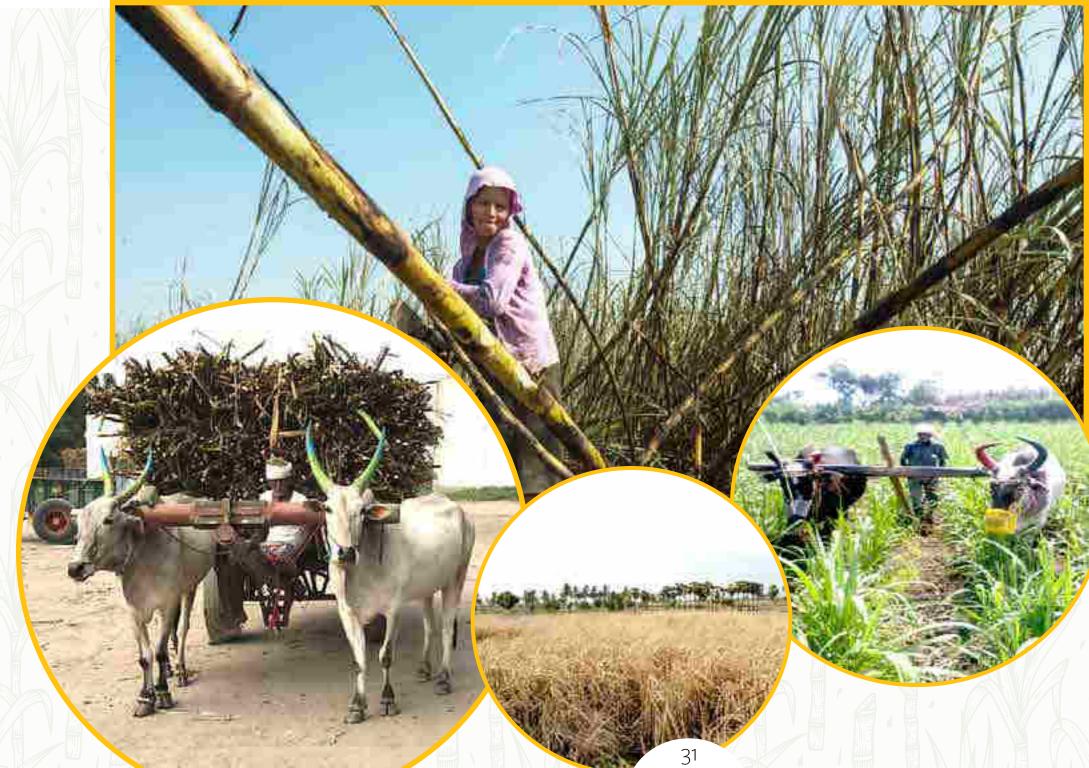
- 7. Procana for Colombia (2012): The programme included Bonsucro tour and technical workshop, launch of a book "The Sugar Road" in partnership with Arcor Group, along with doing a gap analysis of Procana farmers and developing a sustainability self-guide.
- 8. Expanded RenovAção Project (2012- 2015): Solidaridad retrained sugarcane workers to retain and increase employability. They had lost their job because of mechanization.
- 9. Triple seal and sugarcane productivity improvement in Mexico (2013-2016): Productivity improvement of farm, mill and capacity building or triple bottom and Bonsucro certification were the outcome of the programme.
- 10. ELO Phase 1 to 6 Programme (2014-2020): PSL tools, migrated to the Rural Horizon an online platform with a comprehensive sustainability programme. Elo for Raizen's cover all its out growers. Elo 1st phase 700 suppliers and 5th phase covering 1880 suppliers, of 28 mills (460,000Ha)and Bonsucro certification of 21 mills.
- **11.** Chronic Kidney Disease (CKDnT) among cane cutters in Nicaragua and El Salvador (2014-2016): The programme included research diagnosis, prevention, access to care, justice and alternative development and engagement and grassroots interventions of Water, Rest & Shade Programme (WE) Nicaragua and El Salvador.

- **12.** "Sugarcane, Fuel for Change" in Amsterdam (2015): Solidaridad facilitated an international exhibition in Amsterdam by photojournalist Ed Khashi on CKDnT in Central America.
- **13.** Cana: A cultural Da inovação (2015): A unique campaign was launched in Brazil, in partnership with sugar value chain stakeholders, to promote green plastics from sugarcane and the production of green-certified polyethylene by Braskem.
- **14.** Water-efficient sugarcane production India (2015-2016): Pursued water advocacy agenda through smart and sustainable land and water use, financial literacy and rural agricultural entrepreneurs.
- **15.** Pan-Americana integrated multi-stakeholder platform (2015-2017): Developed virtual knowledge and exchange online platform for sustainable and safe sugar production, and did baseline assessment of 14 sugar mills and consultancy for new sugarcane plantations Agroterra S.A., Chumbagua Mill (Haiti), Mexico, El Salvador, Nicaragua, Guatemala, Honduras, Dominican Republic and Haiti.
- **16.** Procana Fenix programme (2016-2018): Connected with Procana farmer association in Columbia and shared and exchanged experiences and the intervention of digital solution in the sugarcane sector.
- **17.** Topcana (2016-2018): Conducted region-wise programme to meet organizational structural requirements of farmer association Sociana, and AFCOP and sustainable production.



- **18.** 'Meetha Sona Unnati" Climate-smart sugarcane production (2016-2019): Addressing soil health, cost of cultivation, low yields, water use and climate change and building capacity and skills of 125,000 farmers.
- **19.** Sustainable Water Fund FDW (2016-2021): The programme aims at improving water-use efficiency and reducing over-exploitation of groundwater resources for sugarcane production in India and through bulk water infrastructure improvements in South Africa.
- **20.** Mudcana (2017-2020). Developed for Orplana, an umbrella farmer association representing 32 associations, with 11,000 producers covering 25 percent of the cane production of Brazil. Besides sustainability, the programme also targets at improving competitiveness of sugarcane producers, business sustainability by enhancing technical and managerial capacity and outreach supported through remote and data-smart technical assistance.
- **21.** Madhushree Climate resilient sugarcane production (2017-2020): Besides climate resilience, the programme looks into improved farm productivity, profitability, water use efficiency, soil fertility, mechanization and financial literacy of farmer and their improved livelihoods
- **22.** Ganga Landscape (2017-2020): Addressing issues facing sugarcane farming and leather industries in the Ganga basin through landscape approach and multi-stakeholder platform, in alignment with the National Ganga Mission and Indian Sustainable Sugar Smallholders Framework (I3SF), a digital self-assessment tool for sustainable sugarcane cultivation.

- **23.** Climate-smart, sustainable sugarcane farming (2017-2020:. Solidaridad is conducting this programme in partnership with Renuka sugars, across its four mills located in Karnataka that covers 70,000 farmers. It will bring 35,000 hectares of land under climate-smart agriculture.
- **24.** Diversification of PanameriCaña programme (2018-2021): It is being conducted in alliance with Bayer mill Plan de San Luis (Grupo PIASA) and CNPR (Association of Smallholder Sugar Cane Producers) on sustainable development of sugarcane production and improving labour conditions-MAS Caña.
- **25.** "Diplomado" programme (2019): It was launched to train women and youth in sustainable sugar production, in partnership with Bayer, Coca Cola, Plan de San Luis and CNPR.
- **26.** Local Improvement Programme, LIP (2019): The programme focussed on sustainable sugarcane production based on local context and integration of SUSFARMS self-assessment tool with Rural Horizons, a platform developed by Solidaridad to support continual Improvement of agricultural production, in South Africa and Malawi.



#### **OUTCOME OF PROGRAMMES IN BRIEF**



Solidaridad's sugarcane initiative 'Better Sugar: Better Business' started with a meeting of a few like-minded stakeholders of sugar industry in 2005, in London. Solidaridad was quick to facilitate the initiative through its steering committee and technical working group, which became the building blocks of the Better Sugar initiative (now Bonsucro), an international non-profit and multi-stakeholder organization. Set up in 2008, the Bonsucro is now a mainstream global organization with more than 500 members, three standards and 109 certified mills under its name.

In 2009, Solidaridad initiated an umbrella project called Sugar Producer Support Initiative (SuPSI) for smallholder farmers. It helps them to increase productivity, build capacities in better management practices and make them certifiable in Brazil, Africa, India and Malawi. Under the programme, 40,000 farmers have been trained and several Commodity Business Support Centers (CBSC) are established in Brazil and South Africa.



For creating awareness about ethanol-based sustainable bioenergy sector in Brazil, Solidaridad also got engaged in a campaign called 'Everyone drives on Alcohol'. With the support of the Global Sustainable Biomass Fund and several other partners, the programme helped in retaining and increasing the employability of cane cutters who had faced job losses due to mechanization

Solidaridad helped Copernicus Institute to measure the potential for sourcing sustainable sugarcane

ethanol and enabled Renuka de Brazil to obtain Bonsucro certification. Eventually, the shipment of the first batch of Bonsucro-certified Argos fuel ethanol arrived in Rotterdam in October 2012. A unique campaign activity 'Cana: A cultural da inovação' was also organized to increase awareness about the opportunities that sugarcane offers. One of the partners, Braskem, now produces 'l'm Green Polyethylene' through responsible sourcing and Bonsucro certification.





In 2011, Solidaridad launched The Farmer Support Programme (FSP) in partnership with palm oil, soy, sugarcane, cotton and beef roundtables. The sugarcane portfolio

comprised 11 projects in India, Pakistan, Mexico, Brazil, Honduras, Belize, Swaziland, Tanzania, South Africa and Malawi. It operated through 42 partnerships, covering 21 mills to support 240,350 farmers and 15,868 workers while bringing 207,500 ha of land under better management



practices. In Brazil, the retraining courses for workers have produced results in 18 mills with 78 percent reemployment.



In India, FSP brought together 14 sugar mills representing four companies, namely EID Parry, Rajshree Sugars, DSCL and Olam International, along with IFC and reached out to over 200,000 smallholders. The programme extended further to improve water management practices and reduced the demand for water from 36.34 bn to 62.91 bn litres and increased farmers' income by 10 to 20 percent. It also resulted in



two EID Parry and one Olam mills getting Bonsucro accreditation.

2



The programme also facilitated the establishment of two regional associations and a national association SUGAM in Malawi and a draft regulatory framework. It reduced consumption of water and agrochemicals along with fair trade certification and greater diversity of crop. This resulted in 10 percent rise in yield, 20 percent increase in production and enhanced household incomes by 17 percent.

In Tanzania, the grower association (in Kilombero) used aerial photography integrated management system to help farmers reduce costs and improve efficiency. In Pakistan, the FSP has benefitted 9,206 farmers and five mills.

In South Africa, our partnership created Sustainable Farm Management System, which is integrated with 'Rural Horizons' and is now very well accepted by the industry. In Swaziland, small-scale outgrowers have been enabled to break the vicious cycle of yield decline through replanting finance, skill development, support services and a sustainable management system. In Mexico, the programme managed to achieve zero tolerance towards child labour, Bonsucro certification of Gamsa - Lázaro Cárdenas and Ingenio San Nicolas mills, along with the development of a platform called Pan Americana. While in Honduras, the programme facilitated Azunosa mill to move towards



Bonsucro compliance, in Belize, it benefitted 5,500 farmers with increased production, reduced costs and improved soil health.



In 2012 Solidaridad collaborated with Raízen, to enable its entire cane production to be Bonsucro-certified. A Producer Support Loyalty Tool was developed and piloted in partnership with Socicana, which later on migrated to the Rural Horizons online platform. A comprehensive six-phase programme called 'Elo' has so far covered 1,880 suppliers, 28 mills, 460,000 hectares of land and 30 million tonnes of sugarcane. A single platform with multiple assessments allowed producers to improve their efficiency and supply chain partners to create loyalty, trust and relationships among the farmers, mill and the association. The programme also brought substantial improvement in the

entire rural landscape as farmers started looking beyond sugarcane to also grow soy, cocoa and citrus fruits.



The programme expanded further to meet the organizational requirements of farmer associations – Socicana and AFCOP – with 'Topcana' programme, which also enabled Socicana to receive winner of Bonsucro Inspire Award. In 2017 the Muda Cana programme was developed for Orplana – an umbrella farmer association representing 32 associations with 11,000 producers covering 25 percent sugarcane production in Brazil. The programme so far covered about 850,000 hectares and 65 million tonnes of sugarcane produced.

In 2016, with the support of RVO, NSL Sugars and Natems Sugar, a new programme was implemented to address over-exploitation of groundwater resources and improve water use efficiency for sugarcane production. It uses innovative remote sensing and extension tools to support 35,000 farmers to shift to water-efficient practices. Mid-level assessment indicates an improved yield, reduced production cost and a 55 percent increase in farm income.



Climate-related issues of sugarcane production were addressed by projects in partnership with Olam and PepsiCo covering 18,171 farmers. The programme was awarded Most Notable Project of the Year by the Confederation of Indian industry.



In a northern state of India, Uttar Pradesh, the 'Meetha Sona' project with DSCL and Coca Cola has led to a saving of 51 billion litres of water. It brought two awards for DSCL – Global Agriculture Leadership award and Bonsucro Inspire award. A landscape project was implemented to address issues of sugarcane production and pollution from leather industries situated in the Ganga river basin. A unique self-assessment diagnostic tool called I3SF was developed and implemented in four sugar factory command areas. This user-friendly tool, which covers all existing sugarcane standards and codes, is available on Android mobile system and is GPS-integrated.



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In 2013, Solidaridad and La Isla Foundation initiated a study to understand the incidence leading to the development CKDnT in Nicaragua. Later on, with funding from the Dutch National Postcode Lottery in association with the La Isla Foundation, Ingenio El Angel (El Salvador) and other international partners, Solidaridad facilitated scientific research to understand, prevent, contain and eradicate chronic kidney disease. To create awareness about the sugarcane workers of Nicaragua and El Salvador,





an exhibition on 'Sugarcane, Fuel for Change' by photojournalist Ed Kashi was also organized in Amsterdam. Water, Rest & Shade Programme (WE) along with new sugarcane cutting practices, improved health, enhanced harvest efficiency and higher labour productivity.

Pan Americana, which resulted in the Mexico Working Summit, moved ahead with the engagement of more than 2 mills at varying levels in Mexico, El Salvador, Nicaragua, Guatemala, Honduras, Dominican Republic and Haiti. Among them, Ingenio San Antonio have been Bonsucro-certified; 18 sugar mills are currently under gap assessment with the support of Coca Cola; and sustainability programme was extended to Agrotierra. S.A. MScana, a diversified programme in alliance with Bayer de México and the San Luis Mill, to improve productivity, sustainability and achieve certification while covering 9,000 smallholders and 30,000 hectares of land.

The Sustainable Water Fund (FDW) project in South Africa assists the growers in Nkomazi area with the operation of bulk water supply systems and the distribution of water through digital crop monitoring.











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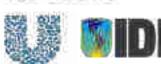














































#### **PROGRAMME PARTNERS**

+86 Partners from 26 countries











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#### STAKEHOLDER REFLECTIONS



"Sustainable development envisages growth that meets economic, social and environmental needs without compromising the future of any one of them. Sugar industry historically has a symbiotic relationship with farmers. Our partnership with Solidaridad over the years has helped in a big way in cementing this relationship and helping sustainable development in our cane

Atul Chaturvedi, CEO, Shree Renuka Sugars, India catchment area."

> "Solidaridad's role in the Muda Cana programme, since the beginning, was essential to contribute to the experience in more than 40 countries to assist us with its digital solution technologies and learning throughout its history, giving Orplana a significant competitive advantage within the agribusiness sugarcane supply chain." Celso Albano de Carvalho, Executive Manager, Órplana, Brazil



"We are very thankful to Solidaridad for the support they provided to the sugarcane industry in Malawi. They facilitated establishment of the national association of smallholder sugarcane farmers in Malawi called Sugarcane Growers Association of Malawi (SUGAM). This has galvanized the voice of the sugarcane farmers. They have gone on to support our resource mobilization drive where they supported the AGM to discuss how we can mobilize membership subscriptions. We are able to mobilize about \$100,000 per year now, which we use in the operations of the organizations. We now have a secretariat where we have recruited full-time staff to run the office. They have also funded development of the new strategic plan for SUGAM Frighton Njolomole, Chairman, SUGAM, Malawi

Solidaridad has been very instrumental in the growth and development of Lakeshore Cane Growers Association. With their support and capacity building, LCGA was Fair Trade certified and qualified to receive Fair Trade Premium. With the premium, LCGA has been able to undertake some massive project such as construction of an Office Complex. We have also provided social services such as construction of teachers'

houses, maternity wing at the local health facility, rehabilitation of roads and installation of water supply system at health facility". Geoffrey Kamtengeni, LCGA Chairman, Malawi

"The sustainable sugarcane programme, which has been built over a decade, is one of its kind in the Northern Ganga basin. The partnership has not only improved the overall quality of life of farming community in central UP but also helped in water conservation, soil health improvement and introduction of innovative methods like climate-smart agriculture and artificial intelligence in agriculture." Roshan Tamak, Executive Director & CEO-Sugar Business, DCM Shriram Ltd, India



Adding an organization like Solidaridad to the RenovAção Project is extremely significant, because it adds recognition of our efforts and positive results achieved so far to improve the quality of life and generate new opportunities for sugarcane cutters. With time, we hope to welcome more companies and organizations so that we can continue to improve and expand our reach." Eduardo Leão de Sousa, Executive Director, UNICA, Brazil



."Solidaridad has supported Malawi through the Ministry of Industry, Trade and Tourism, particularly in the sugar and sugarcane products sector, by among other things funding the hosting of the sugar sector technical working group meetings, a for a for consultations and engagement between private sector and government; consultation with key stakeholders during the development of the sugarcane industry regulatory framework for Malawi and development of the igarcane industry extension services strategy." Nayeso Msokera, Spokesperson, Ministry of Industry, Trade and Tourism, Malawi

"We are truly excited by the second phase of this project with Solidaridad. There is interest and commitment from project partners, and most importantly, we are witnessing a demand from the farmers themselves to learn about water and energy saving. We can see the cane quality and sugar recovery from the cane going up. We have also been able to build a strong cadre of lead farmers who are aligned with our vision to further sustainable sugarcane production and are our ambassadors in the community." Mr. Bharat Kundal, Business Head-Sugar, Olam International, India

"Partnerships and collaborations are essential if we really want to make a difference in people's lives. Together with Solidaridad and Triptolemos we can achieve this - promote sustainable agricultural practices in different parts of the world and improve farmers' livelihoods as well as

Mathias Kremer, Global Head Crop Strategies & Portfolio Management, Bayer



"The sustainable sugarcane partnership between the International Finance Corporation and Solidaridad Asia is one of the most defining and transformative partnerships in the Indian sugar industry. The focus on providing business-driven solutions to sustainability challenges facing the industry has been the driving force in this collaboration. The results on the ground with sugar companies in India such as DCM Shriram Limited, Olam India and EID Parry impacting over 200,000 smallholders is a testimony to the ingenuity and brilliance of our joint efforts. The lessons and experience from this partnership have been used to create similar engagement models for stakeholders across commodities globally." Harsh Vivek, Program Leader, South Asia Agribusiness Advisory Services, International Finance Corporation

"In India, water is of vital importance for sugarcane production. The project on "Increasing water use efficiency in sugarcane growing in India" implemented by Solidaridad assures a great significance in the light of promotion of appropriate technologies for judicious utilization of available water for sugarcane irrigation." Shivajirao Deshmukh, Director General, Vasantdada Sugar Institute, India



"It is very important to showcase the Socicana way of producing sugarcane. We have been working on this process in partnership with Solidaridad since 2011 and now we can show the results and benefits. We are very proud of our growers." Bruno Rangel G Martins, CEO, Socicana, Brazil (On receiving Bonsucro Inspire Award 2018)

"We are doing this because it is the right thing to do. We hope the findings will transform the industry into a better industry." Juan Wright, Director and Owner of El Ángel, El Salvador

"Solidaridad thinks in solutions, without making concessions to its philosophy." Bart-WillemtenCate, Biofuels Director, North Sea Group

"The process of Bonsucro certification was the result of a dedicated co-working processes between Ingenio La Providencia's multidisciplinary team, and Solidaridad Foundation, a non-profit international organization that promotes the integration of sustainable models in the business management, based on social and environmental indicators, and who are also Bonsucro members."

Modesto Magadán, Agribusiness General Manager, Grupo Arcor.



"Solidaridad sponsored my trip to South African Sugar Research Institute (SASRI) where I was exposed to advanced skills in sugarcane production. The training has helped me improve my understanding of the sugarcane business. I am also able to share the knowledge and skills with my fellow farmers in Dwangwa."

Nellie Mithi- Farmer, Malawi

. "Solidaridad sent me to school at South African Sugar Research Institute (SASR1) to study sugarcane production. This helped me understand the technical aspects of sugarcane production. I also attended various training workshops such as Business Understanding Programme (BUP), A-Z, governance and leadership. These training workshops have helped me improve transparency and accountability in the associations. I also understand now the importance of irrigation to improve productivity."

Douglas Mayenda, Sugarcane Farmer, Malawi



"I am very happy to say that through Solidaridad's capacity building programmes in sugarcane farming, I have seen huge change in my farming practices. The A-Z sugarcane husbandry training has improved my understanding of good agricultural practices and enabled me to achieve better yield than before."

Elod Kafaukoma Kasinthula, Farmer, Cane Growers Association

"I knew that the goal of the Meetha Sona Unnatí project was to get the maximum from my crop. That was my goal too. Our two coinciding goals meant that I could trust the Solidaridad team.

Raghav Dwivedi ,Farmer ,India

I have started growing sugarcane in 2002 in KASFA of Mazabuka District. Sugarcane growing has assisted me in improving my livelihood in terms of income. Upon engaging in sugarcane production I have attended quite a number of training related to sugarcane production, environmental management and sustainable sugarcane production. The trainings assisted me to improving my farm productivity and also sustain production. Brenda naluaba Farmer, Zambia

"I started cane cultivation in 1986 and one of the major events I have talked about was price revision for sugar and sugar policies. The upward adjustment in sugar meant increasing farmers income per hectare. I had visited Swaziland and Malawi in 2014 to learn how other nations are faring in sugarcane in sugar meant increasing farmers income per hectare. I had visited Swaziland and Malawi in 2014 to learn how other nations are faring in sugarcane from growing. The knowledge gathered - coupled with other trainings on financial management, irrigation management and diversification programmes - helped me approach farming as a business and increased my cane production."

Phanwell Hankede, Trustee/Farmer, Zambia

"It is true that sugarcane demands water, but it is a misnomer that it demands to be drenched in water like a paddy field. Everyone in the village knows that we have gained a lot from following Solidaridad program." Rajeev Singh, Mahender Singh and Vibha Singh, Farmers, India













#### **OUR TEAM: BOOTS AND BRAINS**

Fatima Cardoso, Aline Silva, Monique Vanni, Maíra Nascimento, Rodrigo Castro, Xavier Andrillon, Mariana Alves. Joel Brounen. Andrea Olivar Maria Goretti Esquivel. Carlos Garcia, Ernesto Cavazos, Johnson Kudzaishe Bungu, Humphrey Nxumalo, Wilson Mngwambe, Benard Mulenga, Misozi Magaleta, Sinodumo Ndokweni, Julius Rono, Nancy Rapando, Stephen Kithuka

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Sven Sielhorst (till 2016), Mambully Chandrasekharan Gopinathan

**Board of Directors**: Nico Roozen, Jeroen Douglas, Shatadru Chattopadhayay, Michaelyn Bachhuber, Rachel Wanyoike, Gonzalo la Cruz, Mandla Nkomo, Isaac Gyamfi, Rebecca Kaduru

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Not last or least, all donors and partners who supported us to make this journey possible.

#### **ABBREVIATIONS**

AFCOP. Associação dos Fornecedores de Cana da Região Oeste Paulista

**CBSC.** Commodity Business Support Centers

**CNPR.** Association of Smallholder Sugar Cane Producers

**DSCL.** DCM Shriram Consolidated Limited

FDW. Sustainable Water Fund

**FSP.** Farmer Support Programme

GPS. Global Positioning System

IFC. International Finance Corportation

**13SF.** Indian Sugar Smallholder Sustainability Framework

LIP. Local Improvement Programme

**PSLT**. Producer Support Loyalty Tools

**REC.** Regiional Expertise Centers

**RSB.** Round Table on Sustainable Biomaterials

RVO. Netherlands Enterprise Agency

SHE. Safety, Health and Environment

SUGAM. Sugarcane Growers Association of Malawi

**SuPSI.** Sugar Producer Support Initiative

UNICA. Brazilian Sugarcane Industry Association

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