FARMING FUTURES: EMERGING SOCIAL ENTERPRISES IN INDIA

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UPFRONT

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Sugarcane Cultivation With the Motto, 'More With Less'

AgSri Agricultural Services Private Limited

Making 'More with Less' is possible in agriculture – the above catchphrase aptly sums up the work of AgSri. The Sustainable Sugar Initiative (SSI), designed and promoted by AgSri, is a new method of sugarcane cultivation which reduces use of seed cane, water, and fertilizers and increases productivity. The increased tonnage could be as high as 80 to 100 tonnes per acre; from 45 to 50 tonnes obtained under the existing practice of cultivation. SSI is beneficial to farmers on many counts; reduced input costs, savings in water consumption, improved productivity per acre, and hence higher price realization on sale of sugarcane. The point of departure of SSI is to plant month old plants raised in a nursery instead of the traditional method of planting cane. The core business of AgSri is to establish nurseries and raise samplings. AgSri is promoting SSI currently, with close to 3,000 farmers in Maharashtra, Karnataka, Telangana, and Uttar Pradesh in the loop. Its advisory work has also benefited farmers in Kenya in Africa. Deliberate efforts have been made by AgSri's promoters to publicize and demystify SSI technology for all interested farmers by making available all relevant literature, both in print and electronic format, for free viewing and practice through 'do it yourself' YouTube videos. This is a distinct feature of AgSri's enterprise idea. Dr Biksham Gujja (henceforth Dr Biksham) of Hyderabad, Telangana, researcher and scientist turned entrepreneur is behind this enterprise that began in 2010.

1. Formation of AgSri

Dr Biksham, who started AgSri in 2010, brings varied experiences to his current work as an entrepreneur across a career spanning over three decades. A researcher and scientist, Dr Biksham completed his Ph.D. studies from Jawaharlal Nehru University (JNU) in 1984 and followed it up with a two-year post-doctoral programme at McGill University, Montreal, Canada. Upon his return he started out in the development sector in Hyderabad, in the then Andhra Pradesh (now Telangana), and was closely associated with the non-governmental organization (NGO) Deccan Development Society (DDS) from 1988 to 1992. Subsequently, in the period 1993 to 2010, he worked with World Wildlife Fund (WWF) and International Crops Research Institute for the Semi-Arid Tropics (ICRISAT). It was during his association with these two institutions that Dr Biksham began his work on sustainable agriculture, more precisely Sustainable Rice Intensification (SRI) as a methodology. Dr Biksham and the ICRISAT–WWF project played a key role in forging partnerships with multiple stakeholders including farmers, NGOs, agricultural scientists, universities in and outside India, and governments, both at the state and central level to create a momentum in first bringing awareness and later disseminating SRI principles and its adoption across the country. Based on the success of SRI, a similar principle and method was applied to sugarcane, and thus was born the Sustainable Sugar Initiative (SSI). Sensing opportunity, in 2010, Dr Biksham quit his job and established AgSri, with the objective of producing sugarcane seedlings and selling to farmers.

2. Environmentally Efficient and Productive Sugar Economy

According to information published on the website of the Vasantdada Sugar Institute (VSI) the Indian sugar industry is the second largest among the agri-based processing industries in India after the textile industry with a turnover of around ₹30,000 crore. The sugar industry has played a major role in initiating rural development in India. There are now more than 550 sugar factories across the country. More than 45 million sugarcane growers and their dependants count on the sugar

industry, which is in itself the largest employer in rural areas, providing work for about 4 lakh people (VSI n.d.).

While sugar takes a place of prominence in Indian cuisine and is the second largest agri-processing industry, it needs to be noted that sugarcane is a water-guzzling crop and often blamed for creating disparity in villages with limited water availability. Even with the water crunch, the farmer still tends to grow sugarcane, rather than cultivate pulses, cereals, or vegetables. From sowing to harvesting, sugarcane takes anything between 12 to 18 months, depending on the varietal selection. With increasing water stress and decreasing water table, there is looming pressure on sugarcane production and farmers to reduce consumption of water and use it efficiently.

This is where AgSri seeks to intervene through SSI and address several economic and environmental problems. One of the key interventions of SSI is to replace traditional methods of sugarcane cultivation. SSI propagates planting of sugarcane bud grown in a nursery. While yield is often the focus of any new practice, SSI is acclaimed for a spectrum of benefits starting from significant reduction in volume of seed cane, breathing space for the main cropland, huge water savings, higher germination efficiency, use of effective germplasm material, to land availability for intercrops, family nutrition, and ease of crop management like drip irrigation, weeding, harvesting, etc.

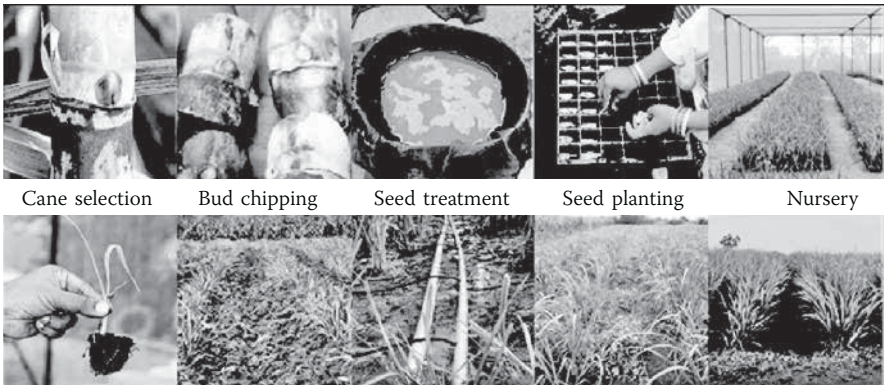
Sugarcane is a vegetative crop and there is no seed. Conventionally, 3–5 tonnes of raw sugarcane is used to plant one acre of land. In spite of the high seed rate, the close planting limits the population of crops to 25,000 canes per acre with 8–10 tillers (shoots) per clump and 3–4 millable canes per clump. Very high density of clumps affects the penetration of sunlight and increases the competition for nutrients, leading to high mortality.

The SSI method is designed to use resources efficiently and produce similar or better yield than that of conventional practices. The key feature of SSI is the planting of seedlings raised in a nursery from single bud sugarcane chips rather than planting cane setts with several buds, and maintaining a wider space between the plants. The manual for SSI suggests six principles for a sustainable management prospect:

- Raise plantlets in a nursery using single budded chips
- Transplant young seedlings (25–35 days old) to the main field
- Maintain wider spacing between the plants (5 feet between two rows and 2 feet within the column)
- Provide sufficient moisture but avoid inundation of water
- Encourage organic nutrient and plant protection measures
- Practice intercropping for effective utilization of land

Figure 1 below illustrates the steps involved in SSI practices that include selection of healthy canes at appropriate age, chipping of buds, seed treatment to avoid infection, bud placement in cavity trays with coco-pith, watering and germination, transplantation of 25–35-day-old seedlings, planting with 5×2 feet spacing, irrigation using drip technique, mulching, and intercropping. As in any new intervention, when farmers adopt a new package of practices they will need to give up existing practices of cultivation. Not just that, it also requires behavioural changes in terms of welcoming the changed practices.

Figure 1: Cultivation under SSI – cane selection to standing crop



3. Business Potential While Serving the Social Cause

There are several economic advantages of switching over to the SSI method of planting sugarcane *Table 1* shows two scenarios, the

conventional method and the one with SSI practices, with associated costs. Under the traditional method of cultivation, in the first month of sugarcane growth, farmers use about 25 per cent of water to irrigate the plant beds and germinate the seed. Under SSI this (wasteful) use of water is completely avoided. Also, under the traditional method, sugarcane is buried and hence is a clear loss to the farmer. Under SSI, the sugarcane (minus the bud chipped for nursery) is used to make jaggery (*gur*) and reduce loss of 'buried' sugarcane.

Table 1: The traditional and SSI sugarcane cultivation compared

Sl No.	Particulars	Conventional practices	SSI recommended package of practices
1	Seeds requirement (per acre)	3 to 4 tonnes	4,500 seedlings
2	Cost of seeds/SSI seedlings in nursery	₹7,500–10,000	₹12,400
3	Average water requirement per acre (cubic metres)	9,000	6,000–7,200
4	Productivity per acre	35–40 tonnes	50–60 tonnes
5	Gross income at ₹/acre (sugarcane price: ₹2,500 per tonne)	₹87,500–1 lakh	₹1.25–1.5 lakh

Source: Discussions with AgSri staff during field interactions

In addition to these obvious savings on seed and water, there are two significant benefits accruing from SSI in terms of productivity enhancement – first is the 100 per cent or near 100 per cent germination of sugarcane seeds; second, the productivity gain accrued as a result of the spacing advocated under SSI method. As per the recommended practice, spacing of 5×2 feet is maintained in rows and columns while planting, thereby allowing the sugarcane stalks to absorb more water at the roots and sunshine from above, which leads to healthier overall growth. Each plant grows at least 30 to 40 tillers (shoots) and thereby there is an overall productivity enhancement.

There are several possibilities for a farmer to switch over from the traditional to SSI method. One of the easiest is to have their own nursery plot and then transplant the month-old plant to their own field. This is easier said than done. AgSri intervenes as a business and provides nursery-raised plants to the farmers at a cost, saving them the labour of raising their own plants.

Manual operations in preparing nursery of sugarcane plants

4. Customers – Sugarcane Farmers and Industry

Sugarcane farmers and their organizations are the most important customer base of AgSri. The social enterprise began its operations offering consultancy services to a private sugar company in Uttar Pradesh that had a turnkey contract in the state. At the end of the contract, the company decided to set up its own nursery production facility. After Uttar Pradesh, AgSri's operations expanded to other states starting with Solapur in Maharashtra and Medak (now Sangareddy) in Andhra Pradesh (now Telangana) in 2012. A new location of Ahmednagar in Maharashtra got added in 2015. In the subsequent years, its work expanded to Mandrup (Solapur), Maharashtra (2016) and Belgaum, Karnataka in 2016.

AgSri's own seedling and production facilities started operations in 2013–14 in Maharashtra and Karnataka; the company continues to have a stable and strengthening relationship with a few cooperatives. Cumulatively, it has reached close to 3,000 farmers so far. *Table 2* details the company's expanding base across four Indian states. The number of farmers has seen some fluctuation depending on market demand. Wherever the company has taken upon advisory services in (and outside the) country, the numbers of farmers have increased.

Table 2: Expanding operations of AgSri (2010–18)

	2010–11	**2013–14**	**2017–18**
Major activities	**SSI consulting**	**SSI seedling production and sales**	**SSI seedling production and sales**
Outreach states names, districts name etc.	*Uttar Pradesh:* Muzaffarnagar, Saharanpur, Khushinagar, Amroha, Rampur, Moradabad, Bulandshahr *Maharashtra:* Latur, Beed	*Telangana:* Medak (now Sangareddy) *Maharashtra:* Beed, Solapur	*Telangana:* Sangareddy *Maharashtra:* Solapur, Ahmednagar *Karnataka:* Belgaum, Mysore

	2010–11	2013–14	2017–18
Major activities	**SSI consulting**	**SSI seedling production and sales**	**SSI seedling production and sales**
Outreach number of beneficiary farmers direct and indirect separately	2,500 farmers	460 farmers	1,300 farmers
Branches		*Telangana:* Sangareddy *Maharashtra:* Beed (now closed), Solapur	*Telangana:* Sangareddy *Maharashtra:* Solapur, Ahmednagar *Karnataka:* Belgaum, Mysore

Source: AgSri records shared during researchers' visit

4.1 Business details

Table 3 shows the performance of the company over a six-year period beginning 2010–11. The break even for the product on cost of production versus sale price was achieved from the third year, post the 2013–14 start of operations. However the company also suffered some financial losses due to damage of saplings as a result of adverse climatic conditions and crop losses at the end of season due to non-lifting by farmers and poor rainfall year in 2014 (that continued till 2016).

Table 3: Performance of AgSri (2010–11 to 2017–18)

	2010–11 (in ₹)	2013–14 (in ₹)	2017–18 (in ₹)
Gross/sales income	1,00,54,892	1,17,27,832	2,70,26,986
Grants	54,49,918	Nil	10,00,000
Expense on human resource	48,50,210	47,29,528	68,03,995

	2010–11 (in ₹)	2013–14 (in ₹)	2017–18 (in ₹)
Expense on marketing	16,54,500	Nil	Nil
Net income/(loss)	9,72,299	1,33,43,642	40,24,204
Dividend declared (if any in %)	Nil	Nil	Nil

Source: Information shared by AgSri on email in September 2018

As seen from *Table 3*, in addition to selling over 40 lakh of nursery plants (each costing between ₹2.50–3 on an average) to farmers in financial year 2017–18, another significant revenue stream for the company is income from consultancy services. The consultancy services are provided to both Indian and international sugar sector organizations including work that AgSri has done in Kenya and other African countries.

Presently, Dr Biksham leads AgSri as CEO with 16 persons directly employed by the organization and two professionals hired as technical consultants. In the nurseries, close to 60 women find employment opportunities. Women from neighbouring villages are offered jobs to fill plastic trays, water nursery plants, and so on. AgSri was approached by a few machinery suppliers who offered to mechanize the entire process, saving on costs and increasing efficiency. AgSri refused that offer and instead continued with the manual operations. The photographs in the text illustrate the nature of manual operations. Its work is in four states with the head office located in Hyderabad.

The scale of operations of AgSri's activities is directly dependent on the availability of working capital. As explained to the research team during the field visit, the entire operations are quite labour intensive. Depending on the interest shown by customers, AgSri can plan and implement activities for expansion of its work at new sites. A new site requires capital expenditure, mainly for construction of a nursery shed. The working capital is for material procurement, labour deployment, and time needed to raise the nursery, a month for every batch. In addition, there is a lag in the payment cycle and typically the customer does not pay any advance for the nursery plants. Dr Biksham shared his challenges:

> Currently we are at a stage where we need working capital of at least ₹5 crore to expand our operations. I need at least 10 to 15 persons for my marketing efforts. I am not recruiting them because of constraints on finance. We have approached some non-banking finance companies (NBFCs) offering agricultural loan products but their interest rates (of 18–22 per cent) are too steep for us to afford.

5. A Sugar Cooperative in Maharashtra

Maharashtra has the largest number of sugar factories in the country, mostly organized as cooperatives. They have a long history of socio-economic interventions beginning as early as the 1950s and 1960s with stalwarts such as Padmashri Vikhe Patil of Pravaranagar in Maharashtra, Dr Dhananjayrao Gadgil of Pune, and later many social and political leaders. These cooperatives were the engines of economic growth in many rural parts of western Maharashtra. However, this scenario has changed rapidly in the last fifteen years as a result of the political economy of the sugar sector as also other conditions. Many of the well-established cooperatives of the 1970s and 1980s have become 'sick' (unprofitable). Some of the 'sick' cooperatives are then auctioned and taken over by private sector businesses who turn them around into profitable enterprises. The business remains the same while a new management is put at the helm. In the neighbouring states of Karnataka and Telangana too, there are a few sugar cooperatives. In the northern parts of the country, there are not many cooperatives but factories run by the private sector. All these are potential customers for the AgSri product of nursery plants.

However, getting entry into a sugar cooperative is easier said than done. In addition to the economic logic, many of these organizations are extremely 'politicized' and run on patronage with high (financial) concentration of power in the hands of board members – in fact, just the chairman and a few influential actors. The sugar cooperatives are also an active space for political action, especially in Maharashtra. AgSri had to work hard to gain acceptance from the leadership of some of the sugar cooperatives before it could begin to transact business with them.

5.1 Sri Siddheshwar Sahkari Sakhar Karkhana Limited, Solapur

Sri Siddheshwar Sahkari Sakhar Karkhana Limited, Kumthe, Solapur (SSSSKL) is one of the long-term customers of AgSri. The sugar cooperative was promoted by late Shri Dharamraj Kadadi, a prominent social worker in the 1970s in Solapur district of Maharashtra. The cooperative sugar factory has more than 25,000 shareholder-members. The factory is located just outside the city of Solapur in southeast Maharashtra. SSSSKL has a plant capacity of 7,500 tonnes (crushing capacity) of sugarcane per day. The adoption of AgSri-promoted SSI technology by the cooperative is of significant strategic importance, given the geography and agri-climatic location of Solapur, one of the most drought-prone regions of Maharashtra.

In collaboration with the factory, AgSri is in the process of setting up a nursery within the premises of SSSSKL. In addition to this, it has taken on lease a plot of land and set up a full-fledged nursery in Mandrup, a village about 25 km from Solapur. AgSri has made an investment of approximately ₹16 lakh in the nursery. The nursery has the capacity to produce six to ten batches, each with about 4 lakh nursery plants at a time, that can cater to the requirement of its farmer members. AgSri, through this nursery, solely services the members of the cooperative factory. On the basis of the indents raised by the cooperative, farmers are given nursery plants. The cooperative ensures that it makes the payments on behalf of its members. In addition, AgSri also has a sale counter for non-member farmers who are sugarcane cultivators; they buy it on cash from the retail counter.

During the course of our case-study research, we met Vijay Kumar Sarur. Vijay Kumar is a cane development officer of SSSSKL. In a sugar cooperative factory, a cane development officer is a key person since his office has record of all farmers, their plantation schedule, varieties that each farmer has planted, and therefore exact window of days when sugarcane is ready for harvesting. All these inputs are critical to run the boiler and the factory. Once the cane crushing season begins, the factory equipment has to run day and night, without any break resulting from non-availability of sugarcane, the most important input.

Vijay Kumar explained how SSSSKL introduced SSI in their work area:

> We met Dr Biksham in 2011 in Coimbatore during a training programme. He along with Prof. Rajendra Prasad of that institute (VSI, the Vasantdada Sugar Institute) educated us about the benefits of AgSri technology. It was not really new to us who are in the field. There were similar technologies that were propagated by VSI, an apex research and policy institution of all sugarcane cooperatives in Maharashtra located at Manjri near Pune. The method was cutting the full bud in a ring form (and not slicing just the bud). This method was also known as *Ek Dola* method (one eye method). Only a few farmers in Kolhapur region were practising this method but it was not taken up by everyone.

5.2 Convincing politicians and administrators of SSI's efficacy

Vijay Kumar explained the vast potential of SSI and immense benefits it can provide, not just to farmers but to society at large, if the water saving is costed. He explained:

> In Solapur district alone, there are 33 sugar factories, 11 of which are privately owned. Each factory on an average, per day, has capacity to crush 5,000 tonnes of sugarcane. We are not touching 5 per cent of our membership. If all of our members and those of neighbouring factories switch to this technology, there will be huge water saving. The irony of our district is that the first dryland research institute in India was established in Solapur way back by the British government. Ours is the most vulnerable district in terms of drought and possible water scarcity. Yet, our district has highest acreage for sugarcane and records highest crushing volume of sugarcane next to Ahmednagar and Kolhapur districts. If only we can motivate our farmers, but unfortunately they are slow to respond.

In spite of apprehensions of some farmers in the beginning, with active support from the Chairman of SSSSKL, the cooperative went ahead in introducing SSI technology to its members. In three years, beginning

with 410 farmers buying nursery plants, in 2018 the demand had gone up to 720 farmers.

The political economy of sugarcane is quite complex, especially in the state of Maharashtra where the sugarcane cooperatives have been a nursery of leadership training for aspiring politicians of all parties for many years. The sugarcane economy occupies a central place in the overall rural society in large parts of western and central Maharashtra. Dr Biksham shared many experiences of interacting with politicians from various parties including those occupying influential positions in both Government and the Opposition. Somehow, at the end of all these interactions with those in the corridors of power, there were not many breakthroughs.

The SSSSKL management got interested only after their Chairman heard the AgSri team and invited them to work with the cooperative. One of the staff members of AgSri mentioned that even the price for each plant, whether it is to be ₹3, ₹2.85, ₹2.65, or a figure at a further discount has to be approved at the highest level, the board. The board likes to keep a close oversight on all financial deals that happen in the sugar cooperative.

Interactions with government functionaries has also been long-drawn and futile. In spite of herculean efforts, AgSri has been unable to penetrate the deeply entrenched belief in the existing sugarcane growing practices among the current leadership in the sugar cooperatives in the state. SSSSKL is a notable exception.

5.3 Experience of a farmer

During our Solapur visit, we met a farmer who has been practising SSI for more than three years. He is a member of the local sugar cooperative factory too. He has planted his sugarcane field with even larger spacing (7.5×3 feet) and reported 100 tonnes of sugarcane harvest per acre; this compared to 35–40 tonnes of output via the conventional method. The same farmer has also availed of a Government of Maharashtra scheme for installing drip irrigation facilities. Thus, both on the input and output front, he has benefited significantly.

6. Challenges to Scaling Up and Uptake of Technology

Table 5 shows growing number of farmers adopting SSI technology and willing to pay for the nursery-raised month-old plants. The growing adoption is reflected in the number of plants sold. The number of plants for each farmer would vary depending on the landholding of individual farmers and the land devoted to sugarcane cultivation by them.

Table 5: Farmers adopting SSI (2015–18)

Year	Number of nursery-raised plants sold	Locations
2015–16	13.70 lakh	Solapur (8.74 lakh), Zaheerabad (1.16 lakh) and Ahmednagar (3.8 lakh)
2016–17	62.28 lakh	Solapur (25.8 lakh), Mandrup (6.61 lakh), Ahmednagar (23.42 lakh), Zaheerabad (6.06 lakh)
2017–18	58.67 lakh	Solapur (13.3 lakh), Mandrup (11.01 lakh), Ahmednagar (13.00 lakh), Zaheerabad (5.03 lakh) and Belgaum (16.30 lakh)

Source: AgSri records shared during researchers' visit

In spite of growth, the gap in performance reflected in sale of nursery plants as against potential uptake of the technology seems to be huge. Why is it that a larger number of farmers are not adopting SSI, if the technology is so beneficial to them?

Vijay Kumar of SSSSKL was candid:

> Farmers had apprehensions and even fear whether a single bud that was planted would grow into a full stem. In addition, at the time of planting, they had to incur an outflow of at least ₹10,000-12,000 per acre (assuming 1 acre requires 4,000 saplings, each costing between ₹2.75 to ₹3 per nursery-raised cane sapling). This outflow deterred many of them from pursuing SSI. Also our farmers have got so used

> to subsidy that even here, if the government gives a subsidy of ₹1 per plant, farmers will switch from conventional to the nursery plants. I will share one more example. Besides SSI, we began another initiative called sustainable farming. Each member farmer had to enrol by paying a fee of ₹2,000 for a year. The farmer would benefit from door-step advisory service every month. Our staff of the sugar cooperative would be providing advisory services each month. Out of 25,000 of our cooperative, only 128 farmers enrolled to avail this service. They perceived this even (nominal) fee of ₹2,000 high!

6.1 Finance as a constraining factor

Dinesh Kar, who was Head of Operations at AgSri during our field trip in 2018, shared experiences of interacting with a leading financial institution. AgSri is struggling to get a working capital loan of ₹3–3.5 crore. Close to two years have been invested in meeting officers at different levels of this organization without any resultant money flow happening! All kinds of documents have been requested by them at different points in time from different officers at different hierarchies. 'Actually we have to prove that we don't need money', quipped Dinesh with frustration. When we visited the AgSri office in Hyderabad, he was busy compiling documents that this financial institution had asked for. The checklist of documents ran into some 19 different statements including personal guarantees to be signed by the key promoters. The irony of the entire story was that the department was a 'special window' opened for institutions serving farmers! Dr Biksham explained:

> There is no dedicated window for us seeking investments. Impact investors have unreasonable expectations on the rate of returns. We are just about reaching break-even levels after incurring losses in the first few years. No impact investor will consider our case, given our current balance sheet. I don't charge my salaries to the enterprise because I know it can't afford that. But I am not starving! Thanks to my earlier career and some savings, I can pay salaries to my staff on first of every month.

The bulk of the capital requirement is for both capital expenditure as also working capital. Capital expenditure is needed to construct the nursery shed over land, either given on long-term lease by the sugar cooperative or taken on rent by AgSri. The shed construction, investments in plastic trays, etc., are the working capital items. In addition to this, working capital is needed to prepare plants till they grow for a month. Expenses on labour, packing, and transportation are part of the costs. Payment from the customers materializes only after a 45-day credit gap at the end of the delivery of the plants. Thus AgSri, at any point in time, to continue its existing operations needs at least ₹30–50 lakh as working capital. It is struggling to raise both; so vital for the growth of its business.

Dr Biksham mentioned that in order to tap the huge unmet demand, he would need to appoint dedicated marketing executives. AgSri is not worried about a competitor copying the technology. In fact the entire protocol of SSI is available on the internet including the AgSri website. Farmers and those who want to practice SSI find it cumbersome and are accustomed to the age-old practice of flooding sugarcane fields. Some farmers attempt to raise nursery plants for their own farms but to produce nursery plants in big numbers is quite laborious and hence not many venture into that field. Besides, if a plant is there on the shelf at a cost of ₹2.50–3, farmers prefer to buy it readymade, similar to a fertilizer sold in a packet rather than going for an organic bio-fertilizer to be made by them.

Dr Biksham traced the way finance was generated for the business. As one who has invested a lot of his personal time and finances, he said:

> I realize how hard and tough it is to run a small-scale enterprise. Our business needs at least 10 to 15 more staff for marketing efforts. We need infusion of debt in the company. Our production processes need to be expanded and for that, one needs capital expenses that can come only through a debt or grant fund. There is huge potential to expand our operations.

7. International Recognition

7.1 An award from the Millennium Alliance

AgSri is one of the first projects to receive Water Benefit Certificate (WBC) under the Water Benefit Standard. It received the Millennium Alliance Award in 2014 for the SSI work (Water Benefit Partners 2014). The Millennium Alliance is an organization that promotes sustainable development and innovation in India. Partners include the Federation of Indian Chambers of Commerce and Industry (FICCI), the Technology Development Board (Department of Science and Technology, Government of India), United States Agency for International Development (USAID), UK's Department for International Development (DFID), ICCO Cooperation, ICICI Foundation for Inclusive Growth and the Wadhwani Initiative for Sustainable Health (WISH). The award has been given to nearly 20 organizations throughout India and abroad.

7.2 Eminent advisors and investors

AgSri has an advisory board that consists of reputed scientists. Dr Norman Thomas Uphoff, a professor emeritus of Government and International Agriculture at Cornell University, USA and Dr Amir Kassam, the moderator of the FAO-hosted Global Platform for Conservation Agriculture Community of Practice (CA-CoP) and a Visiting Professor in the School of Agriculture, Policy and Development, University of Reading, UK are on AgSri's advisory board. Dr Ashok Khosla, who founded Development Alternatives Group, headquartered in New Delhi, was also a member of the board.

7.3 Investor speak

While Biksham pooled his personal savings and award money to start AgSri operations, he also had support of Vikram Akula, the well-known banker and microfinance professional. We had an opportunity to meet Akula who has been one of the first investors in AgSri. His observations as an investor but also as a well-wisher are important to understand the dynamics between an investor and an early stage social entrepreneur.

I have known Dr Biksham since 1990. When I first came to India and worked with the Deccan Development Society, he was my supervisor. He also became my guide and mentor. I have learned many things from him, especially my 'field skills'. He has excellent 'field skills'. He has the ability to understand communities through empathetic listening and through dialogue. After I left the Deccan Development Society, I continued interacting with him while pursuing my own work in microfinance. Around 2010–11, when I left the microfinance institution (MFI)–NBFC that I had established, Dr Biksham was working in ICRISAT. He shared the idea of SSI with me. I found it brilliant. My feedback to him was that if the economics (of SSI and its potential benefits) are correct, and the idea creates value for farmers, start a company. I also offered to provide an angel investment for such a start-up.

In AgSri, we have demonstrated with what I call version 1.0 technology in terms of protocol, field-based operations or package of practices. We soon will be ready with version 2.0. We were approached by a leading investment fund who wanted to invest in us but also wanted us to patent the technology. Dr Biksham said 'no' to this idea. I agreed with him. If the promoter of the idea is not comfortable with the investing partner, better avoid such an investor and investments. Essentially, ours is a sort of open source technology, known to the farming community for many years with lot of innovations and improvisations taking place at each farmer level.

8. Musings of a Researcher and Scientist Turned Entrepreneur

We had long conversations with Dr Biksham during our visit to AgSri in Hyderabad. He shared anecdotes of working with the government and policy makers, whom he had met to convince them about SSI and AgSri's work. He found that most of them had scanty knowledge of the sugarcane economy and the innovation that he was propagating. Displaying utter arrogance they dismissed his claims without even hearing out the details or try to understand the potential transformation that SSI could usher in for the economy of the state – the positive

impacts of judicious use of water and thereby on the environment and well-being of the stakeholders.

Dr Biksham shared his thoughts on social enterprises and its operating philosophy:

> There is nothing like a social enterprise. It is a misnomer. Every corporate has a NGO now (for CSR, that is Corporate Social Responsibility, purposes) and every NGO has a company (operating some business activity)! The moment you are registered as a company, your primary responsibility is to take care of the interests of your shareholders. Why does one need to shoulder the extra burden of being a 'social' enterprise? There is nothing wrong in making a profit, paying taxes as per laws of the land. Somehow there is a notion of a bad guy making money.
>
> Every business is supposed to be serving a need. Your product or service or offering has to be paid by somebody, be it a customer if you are a business. If you are a charity, someone (a donor writing a cheque for you) else is picking that cost. Earning money brings in accountability to everybody be it a customer if you are a business. There is no need to stand up on high moral pedestal of calling oneself as a social enterprise and claiming to shoulder the responsibility of saving the world! There is clarity in a profit seeking enterprise unlike glib talk and hanky-panky operations of a NGO.

9. Future of AgSri

On asking about the future of AgSri, Dr Biksham was forthcoming:

> I am a scientist and continue to be so. We are at a take-off stage and need investments from those who believe in sustainable agriculture, which benefits farmers but at the same time benefits the ecosystem. SSI is also climate friendly from both adaptation and mitigation side. We need long-term debt/capital to manage our growth. We are the first sugarcane seed company in the world and I do hope we will find suitable investors. I am also willing to take the help of investors in shaping the company towards more business oriented. I am trying

hard and hopefully we will be able to get some like-minded investor soon.

It will be a pity if AgSri does not build further on its early successes, tap huge untapped potential demand for its technology, and fail to mobilize necessary funding needed for its continued expansion in new geographies covering many more thousand sugarcane farmers. The benefits are evident for those who have already embraced SSI technology and one hopes that AgSri can surmount the challenges of scaling up its finances, back it up with appropriate human resources, and thereby ensure on delivery of its performance on water savings and productivity improvements for a huge number of farmers. Only time will tell to what extent they can attain the goals because while they claim to work with making 'More with Less', they need to demonstrate in their business 'More with More'.

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