



Impact Measurement Case Study

SHREE KAMDHENU ELECTRONICS PVT. LTD. (AKASHGANGA)



Target Beneficiaries:
Dairy farmer members of cooperatives

LOCATION:
India



Sector: Agriculture

Business model: Akashganga is an Indian social enterprise that provides turn-key technology solutions such as automatic milk collection systems (AMCS) to dairy farmers' cooperatives across India, Kenya, Nepal and Vietnam. As a 'B2B' business, Akashganga directly impacts the lives of dairy farmers who interact with AMCS when they deposit milk at cooperatives' local collection centres.

This publication is part of a series of case studies on BCTA Impact Measurement Services (BIMS), a Business Call to Action (BCTA) initiative that demonstrates how inclusive businesses can measure and apply impact data.

BIMS provides 21 participating BCTA member companies with technical expertise and technology to design and implement survey-based data collection for assessing their operational and social performance. BIMS is implemented by BCTA with support from implementing providers Arthify and Echo Mobile.

THE OBJECTIVE

Akashganga wants to ensure that its technology is user friendly and that even those without a formal education can use it to their benefit, across gender and social divides. It engaged BCTA's Impact Measurement Services (BIMS) to measure brand recognition, the perceived added value of its solutions and their impact on dairy farmers' livelihoods.

HOW IT WORKS

1 ASSESSING READINESS



Akashganga is a mature business with medium readiness for measuring impact. BIMS helped it to survey dairy farmers and potential new client cooperatives in order to inform its product and service development, and communicate to stakeholders and investors.

The company initially collected data in two regions. These data indicated that:

75% of farmers live below USD 2.5 per day in terms of 2005 purchasing power parity in India;

men deposit more milk at collection centres than women, although women are more likely to take care of cattle;

75% percent of farmers save or invest their dairy income; and

54% have increased their cattle numbers.

Akashganga developed survey tools to collect data from:

- 1 dairy-farmers;
- 2 managers of existing cooperatives; and
- 3 managers from non-client cooperatives.

Data were collected from three regional cluster samples.

2 PLANNING AND DESIGN



Key social impact metrics measured through the surveys included farmers':

- 1 income levels and sources;
- 2 gender-based participation in dairy activities;
- 3 satisfaction with their cooperatives; and
- 4 awareness regarding AMCS.

3 MONITORING IMPACT

4 ANALYSING DATA AND REPORTING

RESULTS

The company is using the impact data collected with BIMS to: (i) better connect with dairy farmers; (ii) assess and update product and service features of the AMCS; and (iii) develop better marketing and communication materials for new clients.

About Akashganga

Shree Kamdhenu Electronics Private Limited (Akashganga) was established in 1996 in Gujarat, India to develop technology products and systems for the dairy industry. It provides integrated solutions under the Akashganga brand that automate milk collection at local dairy cooperatives and aggregate data on cloud-based servers for district-level milk unions¹ to centrally monitor and manage village-level milk collection in real time. Currently, Akashganga works in 11 states of India and also exports its solutions to countries like Kenya, Nepal and Vietnam.

Previously, only a small proportion of India's 90,000+ local milk cooperatives used automated collection systems. Akashganga's system brought demonstrable benefits to farmers and local dairy cooperatives by increasing efficiency, transparency,

fairness, and speed of payment. This in turn enabled faster processing of perishable milk, prevented spoilage and provided a mechanism to capture and store transactional information that farmers and local cooperatives could use to plan more effectively and improve quality and quantity.

Over the years, competition has increased and Akashganga's growth is now plateauing. To maintain a competitive edge, the company is developing technology solutions that not only cover operations across the supply chain, but address the decision-making needs of milk unions, cooperatives, collection centres and dairy farmers. Akashganga is a unique inclusive business² because it does not directly engage with dairy farmers, but does have direct impacts on their livelihoods.

Step 1: Assessing readiness

Effective impact measurement³ begins with **determining the reason for measuring impact**. A wide variety of tools are available for businesses to measure, manage and report on their social and environmental impact. Approaches range from those generating quick feedback to those requiring a longer timeframe to prove systemic impact. BCtA believes it is important for companies to choose the right approach that meets their business needs given the available resources.

Assessing the company's readiness for impact measurement is a critical first step in determining what impact data to collect, how to collect them and how to use them for business development and social and environmental impact performance. In assessing a company's readiness to measure its impact, BCtA considers its maturity stage

and capacity, which is determined based on the company's clarity of purpose, data-driven culture and resources available for data monitoring and collection.

Akashganga has been a profitable business since the late 1990s. Over the years, it has garnered several accolades from Indian and international organizations, and has attracted investment from social impact funds such as Aavishkaar and the Grassroots Business Fund. It has deployed more than 8,750 AMCS units and expanded its portfolio of products and services to include milk purity testers, milk cleaners, web-based planning systems and mobile-based tracking tools. Akashganga is a **mature B2B business** with a clear social mission – to leverage technology for improving the rural dairy farmers' livelihoods.

1 Milk unions consist of regional cooperatives, which in turn manage village-level milk collection and payment distribution centres.

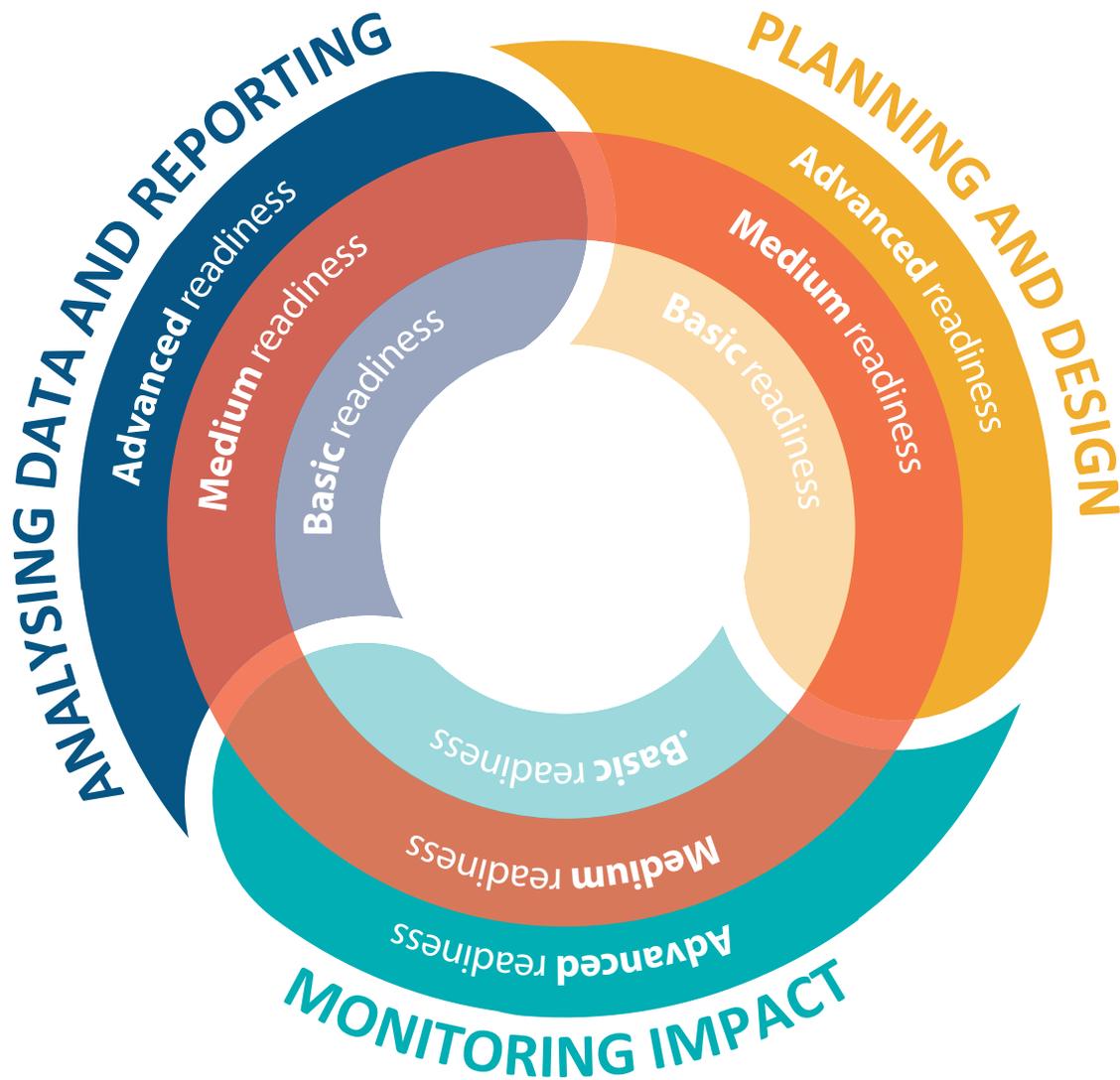
2 Inclusive businesses are commercially viable business ventures that engage people living at the base of the economic pyramid (BoP) – people with less than USD 10 per day in 2015 purchasing power parity – as consumers, producers, suppliers and distributors of goods and services, and their employees.

3 In this case study, "impact measurement" refers to the measurement of social, economic and environmental performance of inclusive business.

It has participated in a couple of investor-led evaluations, including a case study by the World Resources Institute,⁴ but has never directly measured the impact of its business on the lives of the rural dairy farmers. Therefore, with some

prior experience with impact measurement and reporting to its investors, Akashganga has **medium readiness** for measuring impact (see the figure below).

Akashganga's Impact Measurement Readiness



⁴ What works: Akashganga's information technology tool for the Indian dairy industry, 2003.

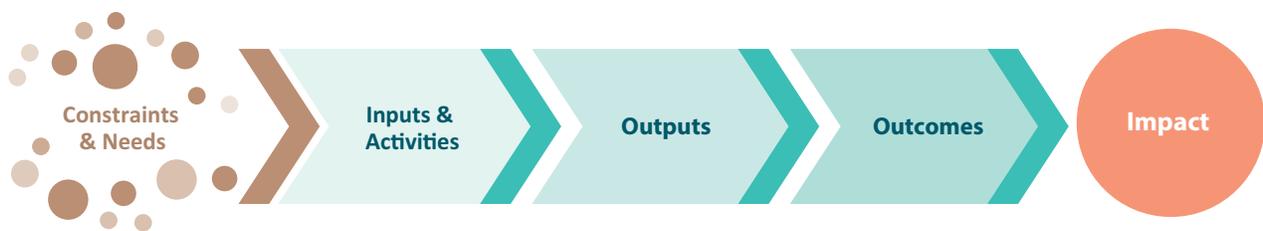
Step 2: Planning & design

The planning stage involves developing an Impact Value Chain⁵ that links business goals, strategies and operations to outcomes and impact related to the Sustainable Development Goals (SDGs).⁶ The Impact Value Chain is the basis for developing impact metrics and indicators that address the needs identified in the previous step.

The Impact Value Chain guides companies in determining what to measure and where to collect data

by mapping business goals, strategies and operations against outcomes related to the SDGs. Despite being a B2B inclusive business, Akashganga was keen to directly connect with its end-beneficiaries – dairy farmers – to understand their awareness and perception of the company’s solutions, and to assess its impacts on milk cooperatives and farmers’ livelihoods.

Akashganga’s Impact Value Chain



Manual milk collection and cash-distribution resulted in:

- Low quality and wastage of perishable milk
- Lack of transparency and trust among dairy farmers and unions
- Long delays in milk collection and reconciliation of payments

Solutions development and deployment

- Time to roll-out new solutions
- Number of new installations per month

Technical support to collection centres

- Monthly support requests received

Marketing and business development

- Number of new client relationships per month

Reduced fraud and improved transparency and trust

- Percent of farmers’ complaining to centres each month

Increased quantity and quality of milk

- Percent change in quality and quantity of milk per centre over time

Reduced transaction times

- Total farmers using AMCS annually
- Average transaction time per farmer

Increased incomes for cooperatives

- Year-on-year profitability of cooperatives

Increased incomes for dairy farmers

- Changes in income from dairy farming over time

Greater participation of women in dairy farming

- Women’s participation in various dairy-farming activities

Greater efficiency and productivity in the dairy sector

- Percent of milk collection centres with automated units

Improved living standards for dairy farmers

- Year-on-year changes in farmers’ incomes and asset ownership

Women’s economic empowerment

- Income available to women dairy farmers

Decision-making questions:

Which products and services need to be developed or improved?

Which outputs stand out and should be a focus of marketing and business development?

How should products and services be priced given the economic gains being realized by cooperatives through Akashganga?

How should the business be scaled up through new products, services or geographical expansion?

5 The Impact Value Chain integrates multiple approaches such as the theory of change, results chain, logframe and business value chains.

6 Adopted in September 2015 by all United Nations member states, the SDGs are a set of 17 global goals and 169 targets related to key development issues facing society today. Countries will aim to achieve them by 2030.

Step 3: Monitoring impact

To monitor impact, BIMS recommends that companies collect data on their operations as well as social and environmental performance on an ongoing basis. Businesses can assess data from primary and secondary sources such as invoices, inventory, customer registrations, market research reports, social media, surveys and polls.

Identifying sources of data is critical for developing data-collection plans using the Impact Value Chain. Many companies already have data that can be used for impact measurement. BIMS suggests that companies should first determine if they can analyse the data they already have. Only if this is not possible should they plan on collecting new data.

Akashganga already has access to routine operational data to monitor the health of its business

and make day-to-day management decisions. These data include the condition and use of AMCS, costs and profit margins of its solutions and support, and potential client cooperatives in the pipeline. The company also has access to output indicators like how many dairy farmers are depositing milk in AMCS on a daily basis and the quantity and quality of milk being deposited; however these data is proprietary and belong to the milk cooperatives. With BIMS, Akashganga created three surveys to collect additional data from (i) dairy farmers – its indirect but primary beneficiaries; (ii) the managers of local milk collection centres to understand their operational challenges and perceptions of Akashganga; and (iii) the new milk cooperatives it plans on pitching to.

Survey implementation

The dairy cooperatives and their smallholder farmer-members that benefit from Akashganga's technology are spread across 11 states of India. The milk-cooperatives have similar organizational structures, follow identical operational procedures and cater to smallholder farmers with comparable socio-economic backgrounds. However, since women's participation and other cultural and contextual parameters were being considered as part of the impact measurement, the company decided to phase its survey work by focusing and analyzing data from specific geographical areas first, before surveying new regions.

- For the dairy farmer survey, given the uniformity across the cooperatives and their milk collection centres, a cluster-based sampling methodology was planned. At least 130 farmers (out of approximately 200 farmers at each center) were to be surveyed from three collection centres that were randomly selected from three districts within Gujarat, and one newly established center in the state of Madhya Pradesh. The districts in Gujarat were selected because Akashganga's presence is highest in Gujarat, and the center in Madhya Pradesh was selected but of its recent establishment. The intention was to compare the beneficiaries in the two states, and within the three districts of Gujarat. At the time of writing of this case study, Akashganga's field staff had surveyed 490 farmers from these centers.
- A similar cluster-based sampling methodology was also planned for surveying the cooperatives' managers at the milk-collection centres. For the first round, Akashganga proposed surveying managers from a single district in which Akashganga had been working for a couple of years. On average, Akashganga has software installations in 170 milk-centers per district. To ensure 95% confidence levels with 5% error rate, approximately 120 managers had to be surveyed. At the time of drafting of this case study, 65 cooperative managers had been surveyed. The company intends to continue collecting more data to ensure it has adequate data for analysis.
- The survey of cooperative managers who could be potential clients was more qualitative in nature, focusing on understanding their needs and the competitive landscape. During the pilot, 15 potential cooperative managers were surveyed. As Akashganga identifies new areas for expansion, it will plan to survey the new cooperative managers in those areas.

Step 4: Analyzing data and reporting

While the purpose and usability of impact data can vary for each inclusive business, the results of impact measurement are generally used to answer one or more of the following questions:

1. Who is being impacted?
2. How are they being impacted?
3. What are the drivers contributing to or limiting this impact?
4. How can this impact be scaled up and linked to the SDGs?

Who is being impacted?

Akashganga's solutions are developed for milk cooperatives whose members are dairy farmers. While these milk cooperatives operate as independent businesses, they represent dairy farmers' interests and are also responsible for helping their farmer members to generate income by collecting, processing, distributing and marketing their milk. Through the BIMS farmers survey, the income levels of the dairy farmers were measured using the Progress out of Poverty Index for India. This data showed that 75 percent of farmers surveyed live below USD 2.5 per day in terms of 2005 purchasing power parity. The survey also showed that only 19 percent of farmers' main source of income is the dairy sector while 71 percent comes from other farming activities, and only a quarter of dairy farmers have women in their households involved in dairy-related activities.

How are they being impacted?

The dairy cooperative movement has been critical to India's dairy industry. The cooperatives support millions of small and marginal farmers, including landless milk producers to generate incomes through dairy farming. Akashganga plays an important role in making these cooperatives' operations more efficient, reliable, transparent and fair. The BIMS data showed that the majority of dairy farmers surveyed knew that Akashganga's system was instrumental in measuring the quality of their milk and tracking and issuing their payments. For cooperative managers, the reduction in collection time to within 30 seconds was seen as Akashganga's most significant benefit.

What are the drivers contributing to or limiting this impact?

All stakeholders welcomed the integration of technology into cooperatives' operations. However, 80 percent of cooperative managers surveyed did not consider automation to have any impact on their overall business, despite having identified a reduction in collection time and better tracking and record-keeping as positive. Akashganga's leadership was not surprised at this contradiction because in its experience, automation leads to more centralized control and decision-making, leaving local managers with minimal information to assess changes in their business. Seeing that information is a key driver of business success, the company is also creating various reporting and dissemination tools (such as those utilizing SMS) to ensure that information flows all the way to farmers.



How can this impact be scaled and linked to SDGs?

The main objective of BIMS is to support inclusive businesses in adopting impact measurement practices that help them to plan, monitor and deliver on their intended social impact – and contribute to achieving the SDGs.

Using the Impact Value Chain, Akashganga identified the following SDGs that are in line with its intended impact:



SDG 1 NO POVERTY

Akashganga reaches approximately 1.2 million dairy farmers through 8,500 AMCS installations. The survey showed that that 75 percent of these farmers save or invest their dairy incomes.

SDG 2 ZERO HUNGER

Akashganga directly impacts the quality and yield of the milk collected by cooperatives. This results in meeting the nutritional needs of a larger population.⁷

SDG 5 GENDER EQUALITY

Automating milk collection and payment eliminates fraud and haggling, making it easier for women to participate in the dairy trade. However, the survey data showed that only 30 percent women take care of cattle and 22 percent deposit milk at collection centres – an issue Akashganga can engage with cooperatives on to improve its impact in this area.

SDG 12 RESPONSIBLE CONSUMPTION AND PRODUCTION

Akashganga's solutions reduce adulteration and food waste by automating and speeding up the collection and processing of perishable milk.

Lessons learned from Akashganga's impact measurement

Even B2B companies can be inclusive and can measure social impact through their clients.

Akashganga has always identified itself as a social enterprise with the objective of developing and deploying technology that is user friendly and allows even those without a formal education to benefit, across gender and social divides. Even though it is a B2B company that works with milk cooperatives, this does not prevent Akashganga from directly connecting with individual dairy farmers (with the consent of the milk cooperatives) to measure the social impact of its solutions. Akashganga is using impact measurement to: improve its brand recognition; design and develop better technology solutions; and differentiate itself while marketing to new cooperatives and potential investors.

Quantitative data can provide further insights into qualitative assessments.

While developing its Impact Value Chain, Akashganga identified greater women's participation in depositing and selling milk as an impact of its AMCS

at collection centres. This assumption was based on interviews with farmers that had been carried out nearly a decade ago by one of Akashganga's investors. While data from the BIMS' survey did show women depositing milk, only 22 percent of those surveyed confirmed this, and only 30 percent of those in charge of cattle were women. The company's management was surprised at this result and is now considering alternative strategies to meet this social objective.

Strategies for scaling up and expansion benefit from social impact measurement.

Over the years, competition has increased tremendously for Akashganga. The qualitative surveys it undertook with potential client cooperatives showed that most were already using vendors to automate milk collection. With its social impact data, Akashganga not only markets the features of its technology solutions, it differentiates itself from its competitors by promoting the social impact it can help milk cooperatives to achieve.

Business Call to Action (BCtA) aims to accelerate progress towards the Sustainable Development Goals (SDGs) by challenging companies to develop inclusive business models that engage people at the base of the economic pyramid – people with less than US\$10 per day in purchasing power parity (2015) – as consumers, producers, suppliers, distributors of goods and services, and their employees.

November 2017



Ministry of Foreign Affairs of the Netherlands



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