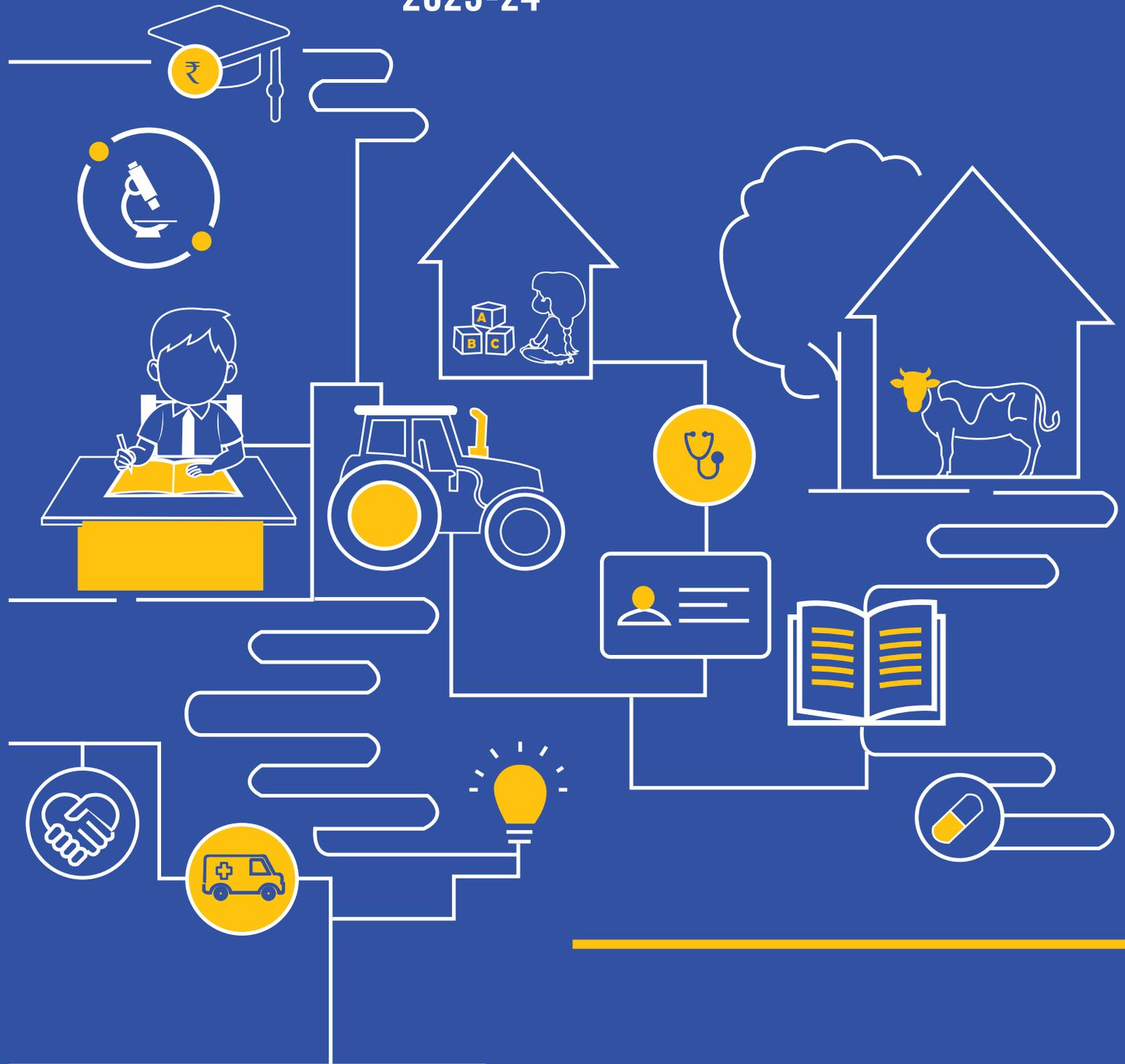**SUMMARY**

IMPACT ASSESSMENT CSR PROGRAMME ALEMBIC GROUP OF COMPANIES

2023-24

1. Object of the Impact Assessment Study

Assess the extent to which project activities were implemented and contribute to achieving project goals. The assessment focused on the quality of technical assistance, feedback mechanism, timeliness, and project completion. Identify good practices and gaps in the project implementation to provide recommendations for program quality improvement and future replication purposes. The project period is 2022-23. 3DM Dataworks was retained to conduct the assessment study.

2. Methodology

The Organization for Economic Cooperation and Development (OECD) criteria for project assessment was adapted for this study (Fig 1). The assessment team used a bouquet of techniques to elicit information and evidence to enable it to make a judgment on how an individual initiative has performed, which include (i) Semi Structured Interviews, (ii) Case Studies, (iii) Observation, (iv) Focus Group Discussion and (v) Secondary Data (where available). Based on the evidence and information, the team rated each project as high/medium/low for each element in the framework (coherence, relevance, effectiveness, efficiency, impact, and sustainability). To keep the biases at bay, a senior team member reviewed the field team assessment and the impressions triangulated. The scoring for each criterion was done as per the following scale:
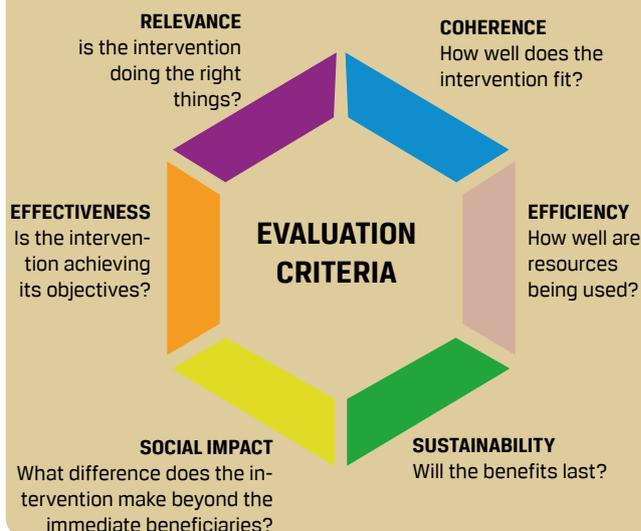
Rating Scale

Score	Category
0-2	Low
2-4	Moderate
4-5	High

Fig 1: The Impact Assessment Framework

RELEVANCE is the intervention doing the right things?

COHERENCE How well does the intervention fit?

EFFECTIVENESS Is the intervention achieving its objectives?

EVALUATION CRITERIA

EFFICIENCY How well are resources being used?

SOCIAL IMPACT What difference does the intervention make beyond the immediate beneficiaries?

SUSTAINABILITY Will the benefits last?

3. Projectwise Summary of Findings

3.1 Quality and Free Education- VIKAS School

Vikas Secondary and Higher Secondary School (VIKAS School) is a free residential Gujarati medium school located at the Alembic Rural Development Society campus in Panelav village. It provides education from classes 9 to 12. The school's vision is to provide quality education to underprivileged community children free of cost, focusing on holistic development. The school also runs a hostel for boys. Since 2022-23, the school has ramped up its effort to improve its academic performance and introduced structured sports coaching and broad-based extracurricular activities. The project scores high on **coherence** since it conforms with the national imperative to provide quality secondary

Summary of Findings

Project	Knowledge Partner	Coher-ence	Rele-vance	Effec-tiveness	Efficiency	Social Impact	Sustain-ability	Overall
A. EDUCATION								
Quality & Free Education - VIKAS School	Dr KR Shroff Foundation	High	High	Moderate	High	High	High	High
		5	5	3.82	4.37	5	5	**4.69**
Shiksha Setu	Dr KR Shroff Foundation	High	High	High	Moderate	High	High	High
		5	5	4.4	5	5	5	**4.9**
B. HEALTH (Swasthya Setu)								
Mobile Healthcare Unit	Bhailal Amin General Hspt	High	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate
		5	3	3.3	3	3	3	**3.38**
Facilitate Issuance of Ayushman Card	-none-	High	High	High	High	High	High	High
		5	5	5	5	5	5	**5**
C. LIVELIHOOD								
Sustainable Agriculture	Farm Bridge	High	High	High	High	High	High	High
		5	5	5	5	5	5	**5**
Animal Husbandry	BAIF	High	High	High	High	High	High	High
		5	5	4.6	4.4	5	5	**4.83**
D. NUTRITION								
SUPOSHAN	Mahatma Gandhi Development Institute	High	High	Hgh	High	High	Moderate	High
		5	5	5	5	5	4	**4.83**

Rating of VIKAS School Project

Assessment Criteria	Score	Rating
Coherence	5	High
Relevance	5	High
Effectiveness	3.82	Moderate
Efficiency	4.37	High
Social Impact	5	High
Sustainability	5	High
Overall	4.69	High

For details of calculation pls refer to page 22 of main report.

education. It is also in line with the Alembic CSR policy, which encourages the Alembic CSR Foundation to work towards projects on education (sec 6.1.iii,g of the CSR Policy—https://www.alembiclimited.com/CSR%20Policy.pdf).

The project is rated high on **relevance** since it addresses the gaps in the secondary school infrastructure available with the host community, which includes - (i) The incidence of educational attainment in the general population up to senior secondary levels is low, (ii) A secondary school in easy reach provides an opportunity for girls to continue their education and thus delay the age of marriage given the patriarchal mores in the host community, (iii) It helps monetize education since a secondary-level school degree is a prerequisite for technical studies(ITI) or getting a job in the nearby industries, (iv) It makes quality secondary education affordable and accessible, while the alternatives to Vikas are expensive or distant.

The **effectiveness** of Vikas school is mixed, which is reflected in a relatively low score for this criteria. In 2022-23, compared to the previous year while the pass percentage in X board exams has improved substantially (45% to 75%), there has been a signficant dip in pass percentage in the XII board exam (78% to 42%). The school has set for itself the target of achieving an 85% pass percentage in X and XII board examinations, for which it has ramped up the academic processes. Given the X preboard (2023-24) result stands at 44%, the target is unlikely to be achieved in X board exams. However, the preboard result for XII (2023-24), which stands at 89%, aligns with the targets. Another concern is that many Alembic scholarship holders either do not avail of the scholarship or choose professional study streams as per precedence and not as per their interest. For instance, in the 2022 batch of three Alembic scholars, two are pursuing general graduation, and one got admitted to the ANM course simply because many before her took up this field of study. Counseling of the scholar regarding the options available for study may be considered. It was also found that despite Vikas school having a well-equipped computer lab, students' knowledge of basic computing skills was low. There have been several positives compared to previous years, which have helped the aggregate score for the effectiveness criteria gain traction, some of which include (i) Classroom attendance levels as per norms, (ii) The bridge course taught for weak students has improved foundational learning, (iii) The tuition for hostlers has improved exam performance, (iv) Student engagement programs like life classes and school parliament is popular with students. In addition, the sports coaching introduced at Vikas has seen the school excel in 18 disciplines (disaggregated by gender) at the taluka level and

qualify for the district-level competitions; never before in the history of Vikas school has such performance been achieved.

Regarding the **efficiency** criteria, while the quality of the learning environment, which includes classroom and attendant infrastructure, is excellent, some faultlines were observed, which weighed down the aggregate score. This includes-(i) improving the maintenance of infrastructure at the hostel, including broken fixtures, switches, whitewashing, etc., (ii) parents' complaints of limited extra-curricular activities like quizzing and declamation, and (iii) the introduction of agriculture as a vocational course is a positive step, while stitching classes are available for girls, no vocational course tailored specifically for girls as per the approved vocational course list of Samagra Shiksha is available at the school.

Over previous years, Vikas School has improved its **sustainability** score through its effort to upgrade the education experience of the students, which in turn will maintain a steady flow of admission seekers.

The **suggestions** include: (i) Strengthening vocational education- agricultural vocational courses collaborate with the agriculture and aminal husbandry initiative of ACSRF to help students get hands-on practical experience and exposure to new technologies. The next generation of farmers will be well-versed on recommended package of practices. Further, given that 65% of the student strength is girls, an appropriate vocational course for girls should be introduced. Samagra Shiksha, Gujarat has approved a list of trades to be taught to the students from class 9th to 12th, which include some of interest of girls- Healthcare, Beauty & Wellness, Retail, Travel & Tourism, Automotive, Apparel Made-Ups Home Furnishing, and Electronics and Hardware, (ii) Promoting soft skill training, (iii) School transport facility for girls is a longstanding demand, (iv) Continuing partnership with Oasis Movement and move on the pathway towards Oasis Misaal School, (v) Improve hostel infrastructure, (vi) Improving reading and general awareness, (vii) Coaching for joining army under the Agniveer scheme, and (ix) Strengthening career counseling.

3.2 Shiksha Setu

The initiative's focus is (i) helping students attain proficiency in foundational language and numeracy skills and (ii) Preparing talented students for the National Means Cum-Merit Scholarship examination. The project is being run in 15 government/aided schools catering to students from III-VIII standards.

Rating of Shiksha Setu Project

Assessment Criteria	Score	Rating
Coherence	5	High
Relevance	5	High
Effectiveness	4.4	Moderate
Efficiency	5	High
Social Impact	5	High
Sustainability	5	High
Overall	4.9	High

For details of calculation pls refer to page 33 of main report.

Shiksha Setu is in accordance with the state's imperative to improve learning outcomes at school and the NIPUN Bharat mission, which focuses on students attaining proficiency in language and numeracy. It also aligns with the focus domains of the Alembic CSR policy (sec 6.1.iii,g of the CSR Policy—https://www.alembiclimited.com/CSR%20. Policy.pdf). This fetches the project a high score in the **coherence** criteria.

The baseline data on learning levels in the project schools reveal that 36% of the enrolled students in classes III to VIII did not have basic writing skills in Gujarati, 27% did not have Gujarati reading skills, and 40% of the students were found wanting in numeracy skills necessitating them to be put through a bridge course. The NMMS track supports deserving students from low-income families to qualify for a national-level scholarship, thereby preventing dropouts and incentivizing them to pursue academic excellence. It was reported that students from the project schools had never appeared for NMMS. The project is thereby highly **relevant** to the context of the CSR catchment project schools.

Overall, the **effectiveness** of the bridge course has been favorable, except for some issues with numeracy skills. While the competency achieved in Gujarati reading and writing is excellent, the achievement in numeracy can be improved, especially in complex multiplication and division. This is as per the learning outcome test (class VI-VIII) conducted by the assessment team for students who have completed L10 levels of the bridge course. Given that proficiency in multiplication and division are critical skills for negotiating middle school mathematics, the project might consider strengthening these domains. This has reduced the effectiveness of the project. Concerning the NMMS track of the project, the performance has been good. It is at par with the NMMS coaching conducted by the KR Shroff Foundation (knowledge partner to Shiksha Setu) in other locations in Gujarat. Of the 71 students who appeared for the NMMS exam after coaching under the Shiksha Setu project, 66% could pass the exam, and four students figured in the merit list of this highly competitive examination. Both bridge and NMMS coaching received high approbation from the parents and teachers.

The project scores well in the **efficiency** criteria. Some of the drivers of this high score are: (i) Project schools have been thoughtfully chosen, including schools from the most socially and economically marginalized villages (e.g., Noorpura, Gopipura, Bhikapura, etc.), (ii) Continuity of bridge course during school vacations through Sheri Shikshan(neighborhood classes) held in public places, (iii) Sufficient complement of staff, (iv) Activity-based teaching has been a game changer, (v) Supplementary teachers are provided to teacher-deficient schools, (vi) The education coordinator proactively ensures students' attendance, (vii) The recent introduction of English in the bridge classes addresses the poor English standard of students, and (viii) NMMS is now a year-long program and an intense coaching regimen can be expected to put more names on the merit list.

The **social impact** (secondary impacts) of the project has been significant. It has helped break the myth that first generation learners display poor learning outcome. Additionally an assurance on their abilities is observed in the NMMS schoarship merit list students coached under the program. The **sustainablity** of the project is rated high. Improved learning outcome has increased buyin for the project from both parents and school authotities and can be expected to enjoy their patronage.Technical backstopping by knowledge partner (KR Shroff Foundagtion) helps steer the program as per the emerging needs.

The **suggestions** include - (i) Effort to strengthen numeracy skills (ii) Include coaching for other government scholarships in lines with the NMMS coaching- Gyan Setu scholarship scheme for 5th-standard and Gyan Sadhana scholarship scheme for 9th standard, and (iii) Coaching for Navodaya vidyalaya entrance.

3.3 Swasthya Setu- Mobile Healthcare Unit

Under this initiative, a full-fledged clinic-on-wheels with an on-board doctor and paramedic staff provides primary care to villagers at their doorstep.

Rating of Mobile Healthcare Unit (MHU)

Assessment Criteria	Score	Rating
Coherence	5	High
Relevance	3	Moderate
Effectiveness	3.3	Moderate
Efficiency	3	Moderate
Social Impact	3	Moderate
Sustainability	3	Moderate
Overall	3.38	Moderate

For details of calculation pls refer to page 38 of main report.

The government of India under the NRHM recommends operationalization of Mobile Medical Units (MMUs) to provide a range of health care services for populations living in remote, inaccessible, un-served and underserved areas mainly with the objective of taking healthcare service delivery to the doorsteps of these populations. The project is in line with the national priorities. It also conforms with the Alembic CSR policy (sec 6.1.iii,f of the CSR Policy - https://www. alembiclimited.com/CSR%20. Policy.pdf). Given the aforesaid, the project scores high on the **coherence** criteria.

The project has been scored moderate on **relevance**. MHU is effective for communities that do not have easy access to primary healthcare. However, several primary healthcare options are available in the CSR villages that MHU frequents. Such options include: (i) Medical Health Units run by Sun Pharma, Parul University, and Polycab cover a number of villages that Alembic MHU also serves, (ii) Subcentres upgraded to Ayushman Arogya Mandirs provide comprehensive primary care and are easily accessible from the CSR villages, (iii) A number of private clinics, manned mainly by qualified doctors with a Bachelor of Homeopathic Medicine and Surgery (BMHS), have emerged in the vicinity of the CSR villages, (iv) The CSR locations of Jarod, Karkhadi, and Panelav have in relatively easy reach specialized medical services located at Halol and Vadodara city, (v) RDS clinic, the health clinic managed by ACSRF at Panelav, attracts about 900 footfalls/month.

The project gets a moderate score for **effectiveness**. It is observed that the patient footfall at the MHU is on the decline. While part of this is due to stricter control on dispensing medicines, it is also because referral to BAGH hospital has been stopped and Ayushman card-based tertiary hospital admission is promoted. Other reasons for the low rating include - (i) The frequency of MHU visits to each village is once a month, which hinders patient follow-up, a

fact acknowledged by MHU doctors, (ii) the MHU conducts to regular OPD, no camps for NCD or anemia screening is organized, and (iii) The MHU doctor is not authorized to refer for a subsidized lab test, and the same has to be routed through RDS, Panelav, with resultant transaction cost for the patient.

The **efficiency** of the project has been scored moderate. The low footfall at MHU leads to high per-patient cost.

While there are several spillover/secondary benefits from good health care, the **social impact** of the MHU program is limited because of low penetration. Discussions with beneficiaries revealed that while the quality of medical consultation and medicines is good, the frequency of MHU visits need to be higher. than once a month per village as is in the present.

Regarding the project's **sustainability**, the low footfall translates to a low social rate of return on investment. In the medium term, other competing CSR projects might lead to a reallocation of resources away from MHU.

3.4 Swasthya Setu- Facilitate Issuance of Ayushman Cards

Ayushman card is an entitlement for the poor to access tertiary health services. However, the government mechanism has not been able to deliver these cards in large numbers in the CSR villages, leading to the inability of entitled beneficiaries to access the entitlement that the Ayushman card promises. ACSRF facilitates the issuance of the cards through the government Ayushman Card portal. This includes registering beneficiaries, helping in making supporting documents, and printing and delivering the cards.

Rating of Ayushman Card Project

Assessment Criteria	Score	Rating
Coherence	5	High
Relevance	5	High
Effectiveness	5	High
Efficiency	5	High
Social Impact	5	High
Sustainability	5	High
Overall	5	High
For details of calculation pls refer to page 44 of main report.		

The project is high on **coherence**. It assists in the implementation of the Ayushman Bharat Yojana in the CSR villages. It also is in st=ync with the Alembic CSR policy (sec 6.1.iii,f of the CSR Policy - https://www.alembiclimited.com/CSR%20. Policy.pdf).

The project scores very high on **relevance**. Of the total estimated population of 584752 across 28 CSR villages, the government Ayushman card delivery mechanism could process approximately 2000 cards, translating to a coverage of only 4%. It was this gap that the project set out to fill.

The project has been a success in terms of **effectiveness**. The project has achieved an impressive increase in coverage. Of the total population of 58472 across 28 CSR, 37219 beneficiaries have received Ayushman cards facilitated under the project, comprising 64% of the population. It is estimated that Rs.33 crore in hospitalization benefits was received through cards facilitated by the project. Beyond providing

timely hospital care, the Ayushman card is an accepted document for accessing many other government schemes like the Vahli Dikri Yojana for girls. In numerous discussions with beneficiaries, it became clear that the Ayushman card was often the difference between life and death.

The **efficiency** of the project has been high. Swasthya Setu spent Rs 15 lakhs on the issuance of cards. Assuming the benefits from the card flow through to the community for the next five years, the leverage ratio is 1:1100, i.e., for every Rs. 1 spent on making the Ayushman cards, Rs.1100 in hospitalization benefit is being leveraged. The project has established a team to achieve scale on the ground and efficiently manage beneficiary mobilization, registration, and attendant logistics. Roping in ASHA as part of the team has helped maximize reach.

The project's **social impact** is high. Access to free hospitalization helps avoid debt and distressed sale of assets. It is also an investment in human capital. It helps reduce poverty and inequality via redistribution.

In terms of **sustainability**, providing access to tertiary hospital care through facilitating the procurement of Ayushman Cards in the hands of the beneficiaries is a one-time effort made under the Swasthya Setu project. The cards will continue facilitating affordable hospitalization until the government continues the Ayushman Bharat program.

3.5 SUPOSHAN

Suposhan project is implemented in 53 Anganwadi Centers and 39 Schools (I-XII) covering 26 villages falling under the ACSRF catchment area. The project focuses on services provided by the ICDS centers and those through the school health program. It addresses a wide range of beneficiaries, including pregnant women, lactating mothers, adolescent girls, children of age (0-5 years), and school students (I-XII).

Rating of Suposhan Project

Assessment Criteria	Score	Rating
Coherence	5	High
Relevance	5	High
Effectiveness	5	High
Efficiency	5	High
Social Impact	5	High
Sustainability	4	Moderate
Overall	4.83	High
For details of calculation pls refer to page 68 of main report.		

The **coherence** score for the project is high. The project intends to fill the gaps in select maternal and child health programs run by the state. The project conforms with the Alembic CSR policy (sec 6.1.iii,f of the CSR Policy - https://www.alembiclimited.com/CSR%20. Policy.pdf).

The high **relevance** of the project emanates from the fact that poor nutrition has been a bane for the project area, with some indicators dipping below the district averages. The project has shown significant progress in key performance indicators and summarizes high project effectiveness. The turnaround has been so significant that some indicators compare favorably with the comparator state (Kerala), ranked first in India's health index developed by the Niti Aayog.

Achievement status of project KPIs

Key indicators	Baseline June 21 to June 22	I year achievement March 23	Comparator (Kerala)*
Malnutrition (under weight)	42%	29%	19%
Anemia (all women)	74%	56%	36%
Full Immunization	67%	84%	82%
ANC Check up (4 completed)	59%	84%	90%
Institutional Delivery	98%	100%	100%
Low birth weight	28%	22%	18%
Attended pre-primary school	50%	71%	53%
Pregnant women referred to secondary/ tertiary facilities	16	68	
Iron Sucrose drip (acute anemia)	8	55	
* Source: NFHS V			

The high **efficiency** of the project is characterized by starting mini Anganwadi at remote locations, strengthening the existing school health program (including the introduction of multivitamins), screening for anemia in adolescent girls and women, strengthening the take-home ration uptake, getting the Anganwadi ECCE syllabus implemented well and capacity building of Anganwadi workers.

The **sustainability** of the significant gains made by the project is a concern, given there are no institutional mechanisms to sustain once ACSRF exits.

The **suggestions** include: (i) Introduce the community-based approach of timely detection of severe acute malnutrition in the community and providing treatment with ready-to-use therapeutic/ nutrient-dense foods at home, (ii) Millet-based snacks may be introduced at Anganwadi Centers, (iii) Sevottam certification of the project Anganwadies, (iv)Balika club to engage adolescent girls on menstrual hygiene and nutrition, (v) Increase frequency of mini Anganwadi sessions, (vi) Assess school readiness using PRATHAM'S MELA tool.

3.5 Farmer Empowerment-Livestock

The project is implemented in seven villages in Jarod's CSR catchment. It intends to improve the productivity of milch animals through efficient artificial insemination, feed supplements, management practices, and improved animal nutrition.

The project rates high on **coherence**. Livestock is an important productive asset of rural households and a driver in the government's effort to improve rural livelihoods. The Alembic CSR policy also stresses enhancing the livelihoods of the host community (sec 6.1.iii.ef of the CSR Policy—https://www.alembiclimited.com/CSR%20. Policy.pdf).

The high **relevance** score of the project emanates from the fact that - (i) The project area has sizeable livestock holding, including 5921 large ruminants1 and 1952 small ruminants. (ii) about 36% of the livestock is nondescript, (iii) poor animal husbandry practices result in low milk yield, and (iv) there needs to be more efficient extension services.

The project has included a slew of animal husbandry management practices, including- (i) Introduction of mineral

Rating of Animal Husbandry Project

Assessment Criteria	Score	Rating
Coherence	5	High
Relevance	5	High
Effectiveness	4.6	Moderate
Efficiency	4.4	High
Social Impact	5	High
Sustainability	5	High
Overall	4.83	High

For details of calculation pls refer to page 53 of main report.

mixture and salt in feed, (ii) Increased frequency of drinking water for livestock, (iii) Chaffing of fodder introduced, (iv) Use of biopesticides to counter pests, and proper housing and clean environs. Apart from this, the project runs a highly successful Artificial Insemination program, with a conception rate of around 50%, much higher than the prevalent rates in the region. The project has introduced Sexed semen for AI in the project area, which increases the probability of a female calf. Most importantly, the project has addressed the issue of infertility in cattle. Around 30% of the animals have infertility problems. The project has treated about 40% of such infertile cows and buffaloes. Shortage of fodder is being addressed through the promotion of perennial Napier grass. Despite an impressive list of initiatives, some concerns remain. The project provides for deworming, vaccination of cattle, and liver tonic for goats; however, a one-time regimen is followed. There is a recommended frequency for administration - vaccine (once every six months), deworming (every month), and liver tonic (monthly). A one-time dose would not have the desired effect. This issue has brought down the project's **effectiveness** score.

The **efficiency** scores have a slight dip. On the positive side, the project has put in place systems and processes to reach the targeted beneficiaries: (i) BAIF, as an implementing agency, puts the project on firm technical footing, (ii) Regular monthly awareness meetings with beneficiaries at village and habitation cluster levels, (iii) Farmer volunteers are enlisted for vaccination campaigns, (iv) Animal Health camps help provide medical attention to animals, and (v) Action research to demonstrate outcome. However, there remain a few concerns that need to be addressed- (i) The project has yet to set up a robust feedback mechanism to track the uptake, at the individual farmer level, of the package of practices and initiatives introduced by the project. It is also felt that there needs to be more boots on the ground. The project caters to approximately 1200 households with livestock spread across 7 villages. Currently, the project is implemented by four full-time personnel persons- two technical personnel from BAIF and two persons from ACSRF(including managerial staff). Given that the project's primary goal is to improve the adoption of desired animal husbandry practices, it needs to be supported by extensive outreach activity.

The project helps improve the quality of livestock assets, thereby ensuring long-term returns. This is being done by improving animal assets through breed improvement (AI) and knowledge assets through creating awareness about desired practices in the community. The project has created institutional structures in the form of farmer groups for long-term sustenance. This translates to a high **sustainability** score.

The **suggestions** include putting a village-level livestock volunteer who is a progressive farmer or local youth on an honorarium. Such a person would provide extension, hand-holding, tracking of recommended practices at the individual farmer level, and be trained to administer vaccination and deworming medicine regularly. It is also suggested that: (i) Vaccination and deworming should be done as per the recommended schedule and not be a one-time affair, (ii) Consider bringing goats into the project's ambit, given the sizeable numbers (estimated population of 1700 goats) in the project area, and are reared by the poorest households, (iii) Introduce AI Gun Digital Cameras, which provide the AI technician with a visual of the artificial insemination process and thereby help improve the conception rate further.

3.6 Farmer Empowerment- Agriculture

The project is implemented in eight villages of Jarod and fifteen villages of Panelav CSR catchment. It supports smallholder farmers in adopting recommended agriculture practices to improve productivity.

Rating of Agriculture Project

Assessment Criteria	Score	Rating
Coherence	5	High
Relevance	5	High
Effectiveness	5	Moderate
Efficiency	5	High
Social Impact	5	High
Sustainability	5	High
Overall	5	High

For details of calculation pls refer to page 61 of main report.

The project rates high on **coherence**. Agriculture is the cornerstone of the rural economy, and the transfer of technology and recommended management practices is critical to increase yields. The Government of India, through a large bouquet of programs, including the flagship State Extension Programme For Extension Reforms (ATMA) Scheme, encourages multi-agency agri extension strategies to bridge the gap between lab and land. The Alembic CSR policy also stresses improving the agro-based livelihoods of the host community (sec 6.1.iii.ef of the CSR Policy - https://www.alembiclimited.com/CSR%20. Policy.pdf).

The project area consists mainly of smallholder farmers with an average landholding of ⟩0.5 -6 bigha. To make agriculture viable for such farmers, intensive agri methods backed by new agrotechnology must be practiced. The **relevance** of the project lies in the stagnant yields and low returns in smallholder farms.

The project scores high on **effectiveness** as it brings incremental changes in returns from farming in the project area. It has fundamentally changed how agriculture is done in the CSR villages, with a strong bias for introducing new technology and management practices. The project has supported significant crop diversification by introducing new varieties of existing crops(paddy, wheat, etc.) and new crops (onion, etc.), resulting in significant changes in yield and marketability. It has also introduced in the farms relevant agri tech, including waste decomposer, nano urea, hydrogel, micro riser, growth promoters (Sagarika), and mycosis, which improves

yield and makes agriculture more sustainable by saving water and protecting soil quality. The introduction of labor-saving tools like rotavators and weeding machines has reduced drudgery, and good-quality *lapeta* pipes reduced water conveyance losses. The project has also seeded the concept of marketing their produce directly to the final customer. Help has been provided on designing packaging, creating linkages with the retail market (r.r. Alembic store), promoting the produce, location tagging of the produce, and building linkages with large retail chains. Many farmers have started to adopt this channel and have retailed products such as rice, green gram, and onions with support from the project.

Regarding **efficiency** in project implementation, the farmers reported that the project team is hands-on and not only provide advice but also roll up their sleeves to practically demonstrate new tech/management practices on the farm. The project has emerged as the farmer's all-weather friend and was reportedly responsive on the phone or in person whenever the project farmers sought assistance. The trust build has brought down the resistance barrier of farmers in adopting new technology. The regular monthly meeting (one in each village) is the fulcrum around which knowledge dissemination, project planning, and receiving feedback revolve. The assessment team attended one such meeting and found the farmers responsive, and two-way communication was happening. The knowledge partner (Green Bridge) collaborates closely with university and research labs. For instance, the procurement of breeder seeds (generally not released for farmers) for Krishna Kamodvariety from Agri University, Anand, and technical assistance sought on aromatic plants suitable for the CSR villages from ICAR-Directorate of Medicinal and Aromatic Plants, Boriavi, attest to this fact. .

High score on **sustainability** emanates from the project's goal to create a collective of farmers that would provide end-to-end services covering almost all aspects of cultivation, from inputs and technical services to processing and marketing.

Some of the **suggestions** that may be considered include: (i) ACSRF may consider using agri drones to spray nano fertilizers, Sagarika, and waste decomposers. ACSRF may support procuring this new technology and train village entrepreneurs to provide this service. ACSRF may consult IFFCO (the manufacturer of Nano Urea, Nano DAP, and Sagarika), who are in the process of procuring industry-standard drones, application equipment, and e Rickshaws to transport drones to farm sites. It is expected that one agri-drone would be able to cover 20 acres per day for spraying, nano fertilizers, and bio-stimulants like Sagarika, Agro-chemicals, etc., (ii) The project may consider shifting to Nano Urea Plus, which has higher nitrogen content, (iii) ACSRF many consider commissioning research studies on the new agro-technology introduced under the project. During the literature review by the assessment team on the efficacy of such new technologies, most of the research pertains to controlled studies in agriculture university farms. Not much literature is available on the efficacy of the technology in farmer fields. This will help disseminate good practices and provide feedback to product developers on the practical implementation of the new agri-tech. ACSRF may consider commissioning studies at the farm level in collaboration with nearby agriculture universities. (iv) To ensure farmers can supply to retail chains in Vadodara in bulk, specific statutory requirements must be fulfilled, including registration of the village farmer groups, GST number, trade license, and FSSAI number. ACSRF may support the farmer organization (s) in meeting these compliance requirements.