



# **ANNUAL REPORT 2022-23**

**SIGMA FOUNDATION**



## President Speaks

“This is the sixth year of functioning of SIGMA Foundation and the team could maintain the pace of work by completing eleven projects during the year. Till the end of the year 2022-23, SIGMA foundation has completed 64 projects and the client-base has also increased steadily by adding five more new clients during the year.

SIGMA Foundation conducted a social cost benefit analysis for the Shashakt Kishori Project of Save the Children, which has strengthened the capacity of the team for conducting similar analysis. The team has been very successful in developing an IOT (Internet of Things) based monitoring of service quality of piped drinking water supply system on a real-time, which will help improve implementation of Jal Jeevan Mission. This was piloted in Joypur Gram Panchayat in Amta II block of Howrah district. Another achievement during the year was preparing Water Security Plan for the district of Purulia, which recommends several measures to cope with the growing water crisis.

Several research papers and case studies have been published by members of SIGMA Foundation, which are mentioned in the report. There is more commitment of the members in conducting research and publishing those in peer-reviewed journals for wider dissemination.”

(M. N. Roy)

President, SIGMA Foundation





## About SIGMA Foundation

Support for Improvement of Governance and Monitoring Advancement (SIGMA) Foundation is a 'not for profit' society. It was established in the year 2014 for serving the society with the initiative of Dr. M. N. Roy, the Founder-President of the organisation. Keeping that in mind, the organisation takes up several activities for improving governance towards enhancing both efficiency and effectiveness of the service delivery towards the poor and vulnerable sections of the society.

This organization has specialization in carrying out assignments on varied issues related to social and economic development. Its area of expertise includes Monitoring & Evaluation of various projects in the field of socioeconomic development, particularly Child Rights and Protection, Public Health and Nutrition, Education; Water Supply, Sanitation & Hygiene (WASH) including Water Quality Management and Water Conservation, Climate Change and Environment Management, Disaster Management and so on. Moreover, SIGMA Foundation too has proven its excellent proficiency in (i) Rural Governance, Decentralize Planning and Poverty Alleviation, (ii) Urban Development, particularly in the sphere of Solid & Liquid Waste Management, (iii) Application of Geographic Information System (GIS) and Satellite Data in designing & developing system, for Real Time Monitoring, and development of IOS/Android application and web-applications for monitoring and evaluation and (iv) Analyses of big data generated through program MIS and its interpretation for decision support. We also take up research and provide consultancy services for implementation of projects in all the said sectors.

The head quarter of the organization is at Kolkata. It has a branch office at Aurangabad in Maharashtra and also have representatives at Delhi and Patna for coordination of our activities in those and nearby states. It is capable of taking up projects in any state of the country. The organization has the experience of working in 19 states of the country namely Assam, Bihar, Andhra Pradesh, Chhattisgarh, Delhi, Gujarat, Himachal Pradesh, Jharkhand, Kerala, Madhya Pradesh, Maharashtra, Meghalaya, Odisha, Punjab, Rajasthan, Tamil Nadu, Telangana, Uttar Pradesh and West Bengal.





## Mission

To sustain learning of the team for improving competence in providing best services to our partners/ clients by maintaining quality, timeliness, cost efficiency and innovations in approach.

## Vision

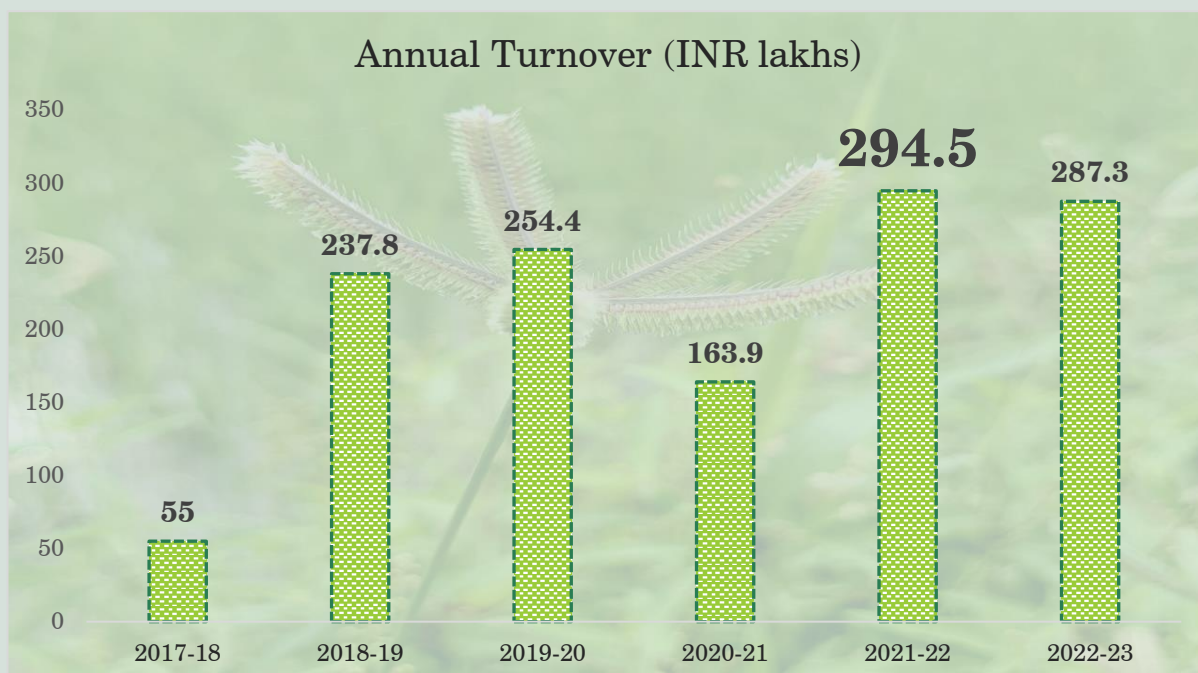
To be one of the most competent organisations in the country for providing Monitoring & Evaluation and Consultancy services and implementation of projects in the field of socio-economic development, public service delivery and strengthening governance.



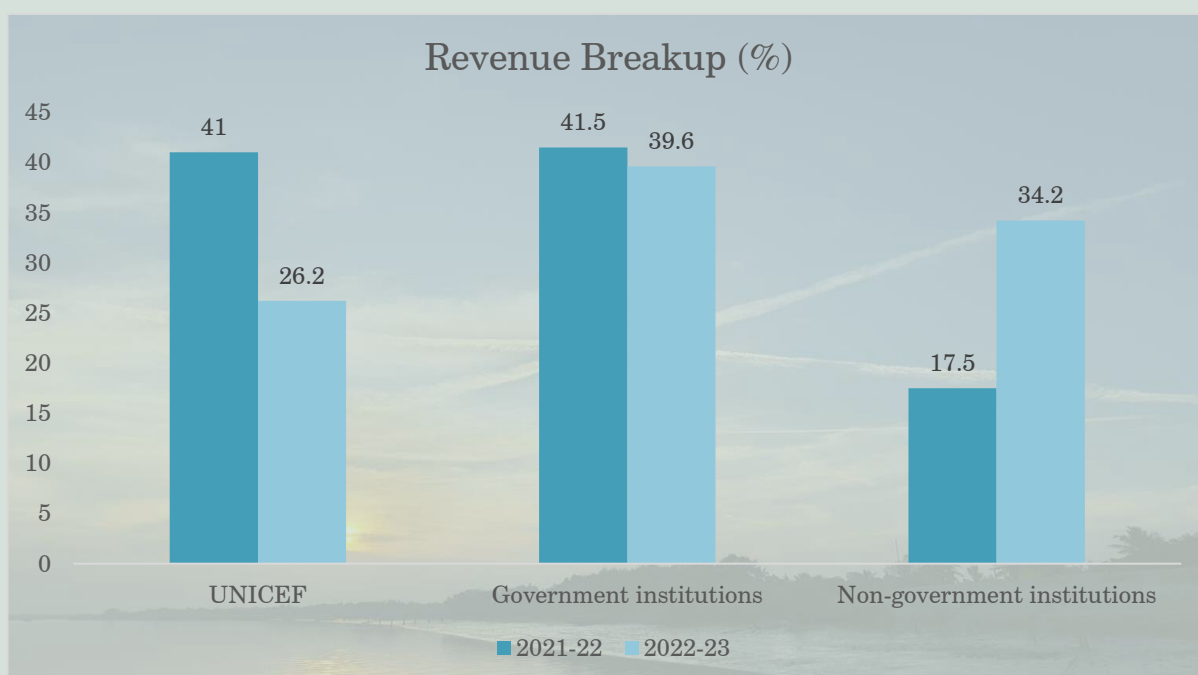


## Financial Statement

In FY 2022-23 achieved turnover to the tune of Rs. 287.3 lakh as compared to Rs. 294.5 lakh in FY 2021-22 and Rs. 163.9 lakh in FY 2020-21.



Flagship programmes with Govt. and Non- Govt. Institutions yielded major revenue in Financial Year 2022-23. Govt. Institutions like PHED, SUDA, District Water & Sanitation Mission (MH) and State Mission Directorate-Amrut have contributed revenue nearly 39.6%. Non-Govt. Institutions like Kailash Satyarthi Foundation, Azim Premji University, Save the Children, William J Clinton Foundation etc., were contributed revenue nearly 34.2%. Revenue contribution from UNICEF was 26.2% in financial year 2022-23.





## Highlights from the year in review

- Total projects taken up during the year: 11
- Total projects completed till the end of the year: 64
- Partnership with new clients during the year: 5

A Programme Cooperation Agreement has been signed between UNICEF and SIGMA Foundation for the implementation of UNICEF-funded programme for India for the period 2023 to 2027.

### Projects taken up during the year

Public Health, Nutrition and Education 4

Child Rights & Protection 4

WASH and Behaviour Change Communication 3

Women Empowerment, Livelihood and Poverty Alleviation 2

Solid and Liquid Waste Management 2

Technology driven Real-time Monitoring 1

Environment & Climate Change 1



## Projects taken up during 2022-23

### Scoping study of malaria surveillance in the private sector

SIGMA Foundation conducted a study on understanding malaria surveillance in the private sector during May-September 2022 for William J Clinton Foundation. The scoping study had taken place across eight districts of two high malaria burden states of Chhattisgarh (Bilaspur, Durg and Raipur districts) and Telangana (Asifabad, Budadri and Mulugu districts) and one low malaria burden state of Punjab (Amritsar and Mansa districts).

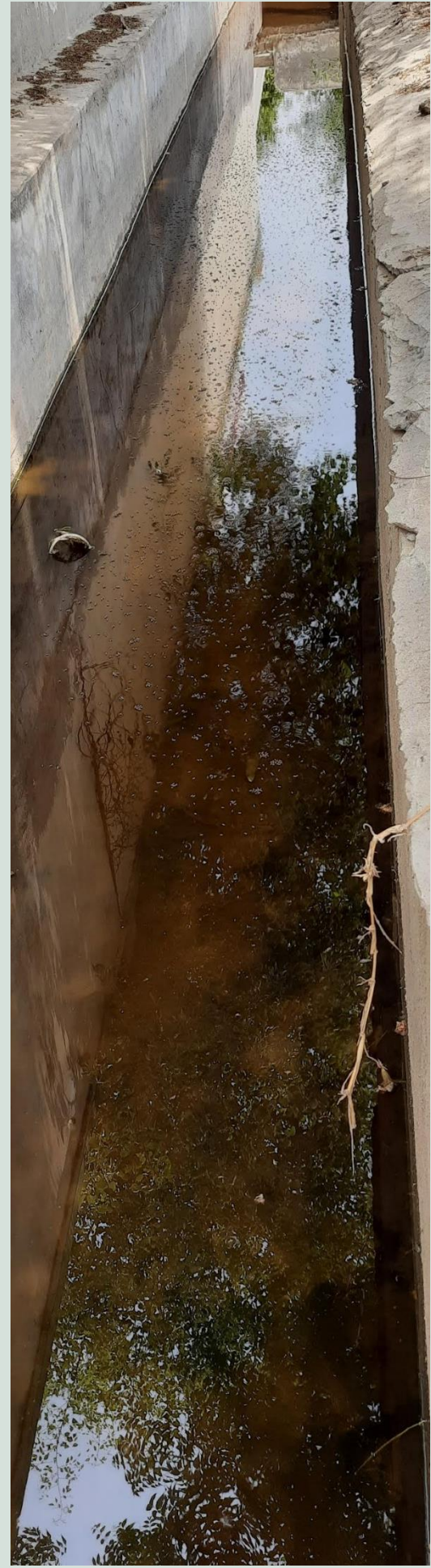
According to the World Malaria Report (WMR) (2020)<sup>1</sup>, India represents 2% of the global malaria burden and bears 85.2% of the malaria burden in South East Asia. Close to 1.3 billion people are at risk of being infected with malaria in India. More than 90% of the Indian population resides in malaria endemic regions. Malaria surveillance is one of the three pillars proposed by WHO in the Global Technical Strategy for Malaria. Malaria is a notifiable disease as per the Government. As private sector provides over 70% of the care, it is important to find ways to engage with the providers.

This scoping study evaluated the gaps and opportunities in enhancing the private sector disease surveillance mechanism and provide actionable and prioritized recommendations. Private sector health establishments (formal and informal), pharmacies, laboratories, community members, government health officials, community health workers and non-government organizations were interviewed to gather knowledge on awareness of malaria and malaria surveillance using open ended questionnaires. 1079 private providers (clinics, hospitals, nursing homes, laboratories, pharmacies), 83 Government officials, 73 frontline workers, 466 households and 2 NGOs were interviewed across the eight study districts.

According to the Findings from the study, around three fifth of the sampled private providers provided malaria testing. Fever patients preferred MBBS/MD doctors for treatment followed by frontline workers and Rural Health Practitioners. Majority of the private providers did not follow the standard treatment guidelines for treating malaria. Almost half of the respondents were unaware of the symptoms of severe malaria. The most commonly cited reasons for non-reporting of malaria cases were inadequate awareness of private providers on malaria being a notifiable disease, unawareness of reporting process, lack of motivation/time, lack of digital reporting format and lack of resources to maintain detailed patient records.

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<sup>1</sup> <https://www.who.int/publications-detail-redirect/9789240040496>





## Impact Assessment (Endline Evaluation and Social Cost Benefit Analysis) of Project “Sashakt Kishori – Empowering Adolescent Girls” in Gaya district of Bihar

The project ‘Sashakt Kishori - Empowering Adolescent Girls’ aimed to contribute towards improving the physical and mental health and holistic wellbeing of adolescents, ensuring stronger labour market outcomes by facilitating a smooth transition to adulthood through enhanced capacities and enabling environment. One of the critical objectives of the program was to delay the age of marriage of adolescent girls and help them make informed decisions regarding their Sexual and Reproductive Health. The program has been implemented for a period of three-years in 41 villages across 4 GPs of Mohanpur block of Gaya district of Bihar. SIGMA Foundation undertook the impact assessment of the project in 2 ways - Endline Evaluation (EE) and Social Cost Benefit Analysis (SCBA).

The EE followed a retrospective cohort approach which used two conceptual frameworks – (a) comparison between the Baseline and Endline values of the study indicators and (b) OECD-DAC criteria of evaluation, specifically, the effectiveness, efficiency, relevance, impact, coherence, and sustainability of the project. It was carried out across 4 GPs of Mohanpur block in Gaya district of Bihar. The quantitative sample comprised 1,039 adolescents. In the qualitative part, 173 interviews (161 KIIs and 12 FGDs) were held in total, with parents of adolescents, ASHA, AWW, teachers, members of SHG, block and district level government officials, etc. The evaluation found that the project had increased enrolment at educational institutes for older girls and reduced the drop-out rate, and improved the awareness, knowledge and attitudes of adolescents in a host of areas, like management of finances, SRH, vocational skills, livelihood opportunities, etc. The study also brought out the challenges the program faced.

The SCBA helped to understand whether the project is viable in the long run through a comparison of the costs incurred for the project and the benefits generated by the project. The study was conducted based on secondary research and using the results from the EE. To calculate the long-term benefits, financial proxies were used from the literature. The overall BCR was found to compare favorably with similar initiatives.





## **Baseline and Knowledge Attitude Practice (KAP) Study for Project “Increased Preparedness in Schools for Safe and Secure Education Continuity in Bihar”**

The primary aim of the project was to create a safe and protected environment in 30 schools within Patna Municipal Corporation area of Bihar, to make them more secured for children from the point of view of everyday risks such as natural hazards, bullying and violence in and around the school premises so that continuity of education is not affected in the face of such unforeseen events. The project has facilitated participatory hazard, vulnerability, risk and capacity mapping, awareness and planning around risk reduction initiatives for children and the communities they live in.

The purpose of this study was to understand how the children are practicing ‘Comprehensive School Safety’ and how the schools are building up violence free school environment given the conducive policy / program environment on part of government and the value addition that the Safe Schools approach is creating in the intervention schools. The study aimed to generate evidence for benchmarking the intervention (as baseline) to contribute in measuring the effectiveness, impact and scalability of specific common approach components, at the end of intervention.

The study followed a mixed method approach. Both quantitative and qualitative methods were incorporated for conducting the study. In total, the study has included 1,120 students, 120 teachers, 480 members of school safety committee across 60 municipal schools (30 intervention and 30 non-intervention schools). Along with these, there were KIIs held with stakeholders at government level.





## Handholding Support to the ULBs for Solid Waste Management

For effective implementation of the Solid Waste Management (SWM) Rules 2016 in the Urban Local Bodies (ULBs), the State Urban Development Agency (SUDA), West Bengal engaged SIGMA Foundation as a Micro Planning Organization for facilitating scientific waste management in 34 ULBs. The ULBs included Municipal Corporations (MCs) such as Asansol MC, Chandannagar MC, Durgapur MC, Howrah MC, Siliguri MC and 27 Municipalities, which included seven district towns and other Municipalities. The main objective of this program is to support ULBs to prepare micro-plan for collection of segregated waste, transportation of the waste and appropriate processing of the dry waste (which are non-degradable and materials can be recovered from such waste) and the wet waste (which are degradable). The personnel associated with waste management were trained by SIGMA Foundation to discharge their duties efficiently. Those apart, intense IEC/SBCC activities were conducted for proper segregation of waste, and timely handing over of the waste separately to the waste collector who visits the premises on a scheduled time. Most of the ULBs face challenges to adopt the appropriate measures and advancement in the fields of waste collection, transportation, and processing. To protect the health and environment, change of social behaviour is essential for all citizens of the area for the management of the generated waste at the point of generation. In this context, SIGMA Foundation facilitated conducting IEC activities to cover Households and Non-Residential Premises (NRPs). Total 643 meetings were conducting at the Ward/para level involving institutions, clubs, residential complexes, religious places etc.

for mass participation in the program. House-to-House enumeration was conducted to collect information regarding the quantum of waste, and type of waste. This survey includes every household as well as the commercial outlets.

SIGMA Foundation also organized training



of workers engaged in management of solid waste and their supervising officials. Training was also imparted on the processing of compostable waste and recyclable waste at different ULBs such as Bansberia, Naihati, Siliguri, Mal, Chandannagar, Durgapur, Kalyani, Hooghly Chinsurah, Uluberia in conformity with the provisions of the SWM Rules 2016. A proforma of a model bye-law was developed and provided to all the Municipalities to frame a bye-law on waste management for their own Municipality. For the effective implementation of the program, our organization engages 7 Regional Supervisors closely monitored the activities of the 80 Coordinators engaged at the ULB level. Apart from the regular visits, more than 200 meetings were conducted with the ULB Core Committee of SWM.



## Rapid Assessment on Trafficking of Children for Labour in Odisha and Telangana

Child trafficking is one of the most exploitative crimes involving buying and selling of children by improper means for a profit. India is considered an active source, transit and destination country for child trafficking. It harnesses well-established trafficking routes across multiple geographies. One such predominant route cutting across the state boundary is from rural Odisha to the brick-kilns, bangle factories, small scale industries, hotels and engagement as domestic help of Telangana. The objectives of the study were to:

1. assess the key vulnerabilities of the source districts and population for trafficking, including the demographic profile of the population along with gender disaggregated information
2. identify the key gaps in the laws, policies and programmes and effective functioning of child protection structures to address this issue
3. understand the current practices and key gaps in the rescue, rehabilitation and reintegration of child survivors of trafficking using the lens of trauma informed survivor centred approaches
4. understand the challenges from the enforcement of legislation, prosecution of traffickers





5. understand the challenges pertaining to survivors' access to compensation, legal support, psychosocial and follow up support
6. understand the challenges pertaining to inter-state coordination for comprehensive child-centred, trauma-informed rescue, rehabilitation and reintegration services for child survivors of labour trafficking.

The study primarily followed a qualitative research approach targeting six source districts in Odisha – Bolangir, Nabarangpur, Nuapada, Balasore, Mayurbhanj, and Keonjhar.; and 5 destination districts in Telangana – Hyderabad, Rangareddy, Medchal, Medak and Yadadri. It used both secondary desk review and primary data collected at the state, district and panchayat levels to respond to the research questions.

The major findings of the study were determined under 4 pillars.

**Prevention:** According to the respondents, children, especially boys, in the age-group of 12 to 14 years from the socio-economically backward communities were most vulnerable to being trafficked for child labour. The key factors driving child trafficking for labour included poverty and indebtedness, dysfunctional family dynamics, lack of awareness, inadequate educational facilities, structure lacunae.

**Protection:** This section primarily captured the processes and challenges of rescuing, rehabilitating and reintegrating survivors of child labour trafficking. On one hand, bureaucratic delays, shortage of resources, non-remittance of victim compensation and back wages, and lack of inter-departmental coordination affected the quality of intervention. On the other, fake identification documents, conflict regarding age of the child, threat calls, fist fights with the contractors, leak of intel, pressure from politicians and local community members complicated efforts of rescue and reintegration of the survivors.

**Prosecution:** The legal processes ensuring the child right to access justice were marred with loopholes, delays and administrative mismanagements weakening the victim's reintegration journey and diluting prosecution of the accused.

**Partnership:** While stories of successful collaboration and convergence were narrated by the respondents, multiple instances of inter-departmental coordination lapses, procedural delays, communication gaps and shifting of responsibilities were also shared. The need for collaborative action was clearly recognised by all stakeholders – government and non-government – but the field reality was shrouded in shades of grey.





## Endline Study on Improving WASH in Healthcare Facility Project in Canning Sub-Division, South 24 Parganas

Terre des hommes (Tdh) in collaboration with Sudarban Social development Centre (SSDC) is supporting government in improving the existing water, sanitation, and hygiene (WASH) facilities and focus on Infection Prevention and Control (IPC) in 9 HCFs situated in 4 blocks, viz. Canning I, Canning II, Gosaba and Basanti in Sundarbans area of West Bengal. Project intervention includes renovation/construction of improved WASH facilities in HCFs, capacity building of cleaning service providers to ensure IPC), orientation of existing KAYAKALP programme of the GOI to ensure operation and maintenance of the improved WASH facilities. SSDC is responsible for day-to-day field implementation of activities at HCF level, whereas Tdh is responsible for providing technical support, as well as capacity building to the partner. There was also interventions at the community level having the following components - (i) Construction of communal tube wells with raised platforms, (ii) Formation of tube well users' committees for sustainable operation and maintenance of the tube wells, (iii) Construction of ecosan toilets in households having children of age less than 5 years (U5), (iv) Setting up of keyhole (nutrition gardens) in U5 households, (v) Training of Government frontline nutrition workers on Health, nutrition, WASH, and disaster management and (vi) Hygiene promotion sessions in the community on key hygiene practices. The end line study was to provide a comparison of pre and post intervention scenario of WASH in community and health facility before and after the intervention.





## Study on Trafficking of Persons in Assam, India

The study is to be conducted to have deeper understanding of the following issues (i) the situation of human trafficking, especially child trafficking in the state of Assam, (ii) situation of human trafficking, especially child trafficking in the state of Assam, (iii) To identify the primary purposes of child trafficking, explore the trafficking routes and modus operandi of traffickers to recruit, transport & exploit victims at destination points, (iv) To identify the key gaps in the laws, policies and programmes implemented for preventing and combating human trafficking, especially child trafficking, (v) To understand the current practices and key gaps in the rescue, rehabilitation and reintegration of survivors of trafficking to prevent their re-victimisation, (vi) The challenges pertaining to survivor's access to compensation and legal support, (vii) To assess the scope of collective action to combat the crime of child trafficking and (viii) To recommend actionable measures to prevent and combat the crime of human trafficking in the state.

The key findings showed that school drop-out, socially and economically marginalised children from the tribal and backward communities such as the Santhals and the tea tribes were considered more vulnerable to trafficking due to their extreme economic deprivation coupled with low social status in the caste hierarchy. Poverty and indebtedness at the household was one of the predominant reasons triggering incidence of child trafficking. This was followed by impact of climate change affecting agricultural output, insurgency and internal conflict, influence of culture and traditional practices, familial disruption (death, illness, domestic violence, etc.), unguided usage of the internet and social media, poor infrastructure, inaccessibility to quality education and social welfare services.

Acting as an active source, transit and destination point, the zone was identified by researchers as a hotbed for traffickers to traffic victims nationally and internationally. Both the primary data collected from the field and the secondary sources assessed during the literature review evidenced that child trafficking is rampant in Assam. Trafficking for labour emerged as the most predominant form of trafficking, it was closely followed by reported incidences of bride trafficking. Other forms of trafficking such as sexual exploitation, organ trade, illegal adoption and drug peddling were not unknown.





## Evaluation of ViSTAR (Village Strengthening Through Adaptation and Resilience) project

Project ViSTAR, “Village Strengthening through Adaptation and Resilience” was implemented with the goal of Increasing Adaptive Capacity to Climate Change Induced Crisis through making the villages climate-resilient. This was implemented in Semi-Arid Districts of Bundelkhand region of Madhya Pradesh (Chhatarpur and Panna districts), Uttar Pradesh (Mahoba district) and Vidarbha region (Wardha and Yavatmal districts) in the state of Maharashtra. Its main aim was to conduct

Vulnerability and Capacity Assessment / Climate Smart Audit for cluster of villages, which are in similar agro-climatic zones; provide training to Gram Panchayat members; establish Local Institutions, build capacity of Climate Change Volunteers and



Panchayat Action Teams; facilitate preparation of village development plans/climate contingency plans and integrate climate change adaptation strategies into it. The strategies involved introduction of water smart, carbon smart, energy smart, energy smart and information smart practices for which farmer field schools were introduced. Those involved taking various water conservation measures, promotion of native crops which can tolerate stress; introduction of preparation and use of green manure, pest control without using chemical pesticide, use of sola pump, smoke-less chullah, provide training on Integrated Farming Techniques & Conservation Agriculture Techniques and climate smart agriculture. It intended to demonstrate climate resilient interventions through Climate Risk and Vulnerability (CRV) models by linking with Gram Panchayat Development Plan (GPDP) and related programmes of the government. The targeted beneficiaries were 10,000 farmers in 150 villages in Bundelkhand and 5,000 farmers in 75 villages in Vidarbha regions. It principally targeted the Scheduled Tribals (STs), Schedule Castes (SCs) and Other Backward Castes (OBCs) comprising the poor and marginalized sections of the society. Special emphasis has been given to women, small and marginal farmers under the program. It has involved women members of the community in providing various benefits.



SIGMA Foundation was engaged to take up an Endline assessment, which was completed within the stipulated three months as per work order from IGSSS. The main purpose of the evaluation study was to critically analyse the field level activities done under the project and capture the impacts of the project in promoting climate smart farming, energy smart devices and building institutions in making the interventions sustainable. Towards this end, the specific objectives of the study were: (a) Assessing the achievements, impacts, success, gaps, best practices and lessons learnt through project interventions in building climate resilience by ViSTAR project; (b) To assess the project with respect to its relevance, effectiveness, quality, and sustainability; (c) To provide recommendations for improving the current strategies/initiatives if necessary and also future project design based on the challenges, success and learning's for follow up; (d) To document best practices, key lessons learned and the way forward for future for replications if necessary; (e) To understand the supplementation of/in the IGSSS's programme's goal of resilience building.

The study has followed retrospective cohort method of evaluation as no control group was available. It has followed mixed method approach i.e.; combination of quantitative and qualitative research and the OECD-DAC criteria of evaluation was followed to disaggregate research questions.

Quantitative data was collected from 366 farmers (to meet the criteria of 95% level of confidence and 5% margin of error). Qualitative data was collected through conducting 12 FGDs with farmers groups and SHGs and 38 KIIs with key informants like Kishan Mitra, Climate Volunteers, functionaries of GP and key person of agro-service centers and officials of the block and district levels. The data was analysed and the report and a power point presentation was submitted to IGSSS.





## Facilitating Implementation of Jal Jeevan Mission and Climate Resilient WASH in West Bengal

SIGMA Foundation has been supporting the Public Health Engineering Department (PHED) of the government of West Bengal in rolling out Jal Jeevan Mission (JJM) in the state as a partner of UNICEF from the year 2021-22. The partnership continued in the year 2022-23. Since the Gram Panchayats (GPs) are to play a crucial role in operationalizing Operation and Maintenance (O&M) of the Piped Water Supply Schemes (PWSS), the support for JJM roll out also included building capacity of the GP functionaries for managing piped drinking. The activities taken up through the partnership were: -

- i. Analysis of Gram Panchayat Development Plan (GPDs) of 50 GPs to understand planning for the WASH (Water, Sanitation and Hygiene) sector, assess implementation of the plan through field visits for assessing the training need for GPs in this sector;
- ii. Strengthening existing STARPARD training curriculum for GP functionaries on the WASH sector for bridging the gap and to also impart Training of Trainers (TOT) of the Panchayat & Rural Development Department (PRDD);
- iii. Development of contextualized risk informed and resilient State O&M policy guideline (for drinking water supply);
- iv. Preparation of a Handbook for GP functionaries on O&M of water supply scheme to be maintained by GPs and handling related governance issues;
- v. Orientation of SPMU /DPMU and Implementation Support Agencies (ISAs) associated with implementation of the JJM on their roles and responsibilities to support PHED in implementation of various components of JJM
- vi. Documentation of five community-based water supply schemes
- vii. Capacity building of GP & VWSC members on O&M of PWSS, Har Ghar Jal Village, risk informed & climate resilient water supply management;
- viii. Develop a system of monitoring water supply service delivery parameters using sensors (for water pressure and water quality – both physical and chemical) and IOT (Internet Of Things) in a pilot scale. To develop an Android -run mobile App. for easier grievance redressal of the consumers of PWSS through a menu-driven option was also developed for easier redressal of





grievances and to also capture water loss through leakages/theft and report to the O&M staff electronically. The system was demonstrated in Joypur GP.

- ix. Developing an implementation framework for livelihood opportunities of SHGs in the WASH sector and validate that in a state level workshop;
- x. Organizing a state level workshop on Climate change impact on WASH services;
- xi. Development of District Water Security Perspective Plan and recommended time bound



- Action Plan for Purulia with special focus on Jhalda I and II Blocks and District level dissemination workshop;
- xii. Development of Block water security plan for Chanditala I block of Hooghly and preparing such plans for 8 GPs of that block;
- xiii. Revision/ Updating of existing State Menstrual Hygiene Management (MHM) Guideline and Action Plan and its dissemination;
- xiv. Assess the status of urban water supply in one mid-size ULB (Chandannagar Municipal Corporation) and association of WASH with child illness.

The major outcomes of this project were (i) developing O&M policy for water supply as well as manual to be followed by the GPs in O&M of the PWSS, (ii) building capacity of all stakeholders engaged in implementation of JJM, (iii) preparation of water security plan and handholding selected GPs in planning and implementation of schemes to promote water security plan, (iii) developing IOT based monitoring



of water supply service delivery and grievance redressal, (iv) developing policy on scope for SHGs to provide support in the WASH sector as their livelihood, (v) updating the manual for MHM for the state and (vi) building capacity of the master trainers for training GP functioning in WASH sector planning under GPDP.



## SIGMA Foundation Introduces Smart Water Monitoring System in West Bengal

The system for Smart Water Management (SWM) using IOT was piloted in Joypur GP of Amta II block of Howrah district. To measure service delivery parameters at both the supply end and at the consumer end, two sets of IOTs were installed – one at the pumping station and the other in the BDO office as a consumer. The IOTs have sensors to measure water pressure, residual chlorine, Total Dissolved Solids, Ph, Turbidity, and Iron. The IOTs have been successfully installed on 27th April 2023 and data is being uploaded twice every day (in the morning and evening as the water supply starts) and visible in the dashboard which all the functionaries associated with water supply will be able to view.



To complement the effort, one App. (to be used on Android run smart phone) has been developed for the consumers to report their grievances electronically. The consumers will download the App from Google Play Store and will use the same to upload their grievances. Those who do not have smart phone will be able to take the help of the Gram Panchayat or any person, who has a smart phone, to register their grievances. The status of complaints lodged like number and nature of complaints, geographic location, progress of redressal of the complaint and communications made to the complainant will be displayed in the dashboard. This will not only help lodging and redressing the complaints but will also give transparency of the system of grievance redressal to the supervising officials.

The App also provides the facility to report various types of water losses like leakage, pipe burst, theft. If any person having the App. come across any such problem, he/she can easily report the same using the App. He/she is to select the nature of problem from a menu option and take a geo-tagged photograph and upload the same. This will help PHED/provider to know the nature of the problem and the location on a real-time which can help in immediately attending the problem and the actions taken can be tracked in the dashboard. A consumer database with individual unique ID and their sensitization is a prior need to use the App. This has been demonstrated in a village of Joypur GP as a pilot. which is going to be scaled up after the ensuing Panchayat election.



## Baseline study and training need assessment of Anganwadi Supervisors and Anganwadi Workers for implementation of targeted counselling during 1000 days window

In order to improve the maternal and child health care, Government of Assam, have organized and improved the service delivery to mothers and infants along the continuum of care across life cycle including access to health facilities. Data from National Family Health Survey (NFHS-5), 2019-2021 revealed that the nutritional status of children and its critical determinants such as exclusive breastfeeding, early initiation of breastfeeding and adequate complementary feeding has not shown much improvement in the recent years.

ITC Mission Sunehra Kal, as a development partner, collaborated with the Directorate of Women & Child Development, Govt of Assam to demonstrate the Prevention of Malnutrition in eight districts of Assam through working with Anganwadi workers on strengthening their capacity for home-based targeted counselling, especially during the first 1000 days through digital counselling tools and counselling aids. The interventions on the ground will be conducted by the YouthInvest Foundation. Before initiation of the formal intervention, YouthInvest Foundation wants to conduct a baseline study as well as Training Need Assessment (TNA with Supervisors and Anganwadi Workers). This study is a part of the MoU signed between ITC and the Directorate of Women & Child Development, Govt of Assam.

The field study will be undertaken across eight districts of Assam namely Baksa, Barpeta, Dhubri, Darrang, Goalpara, Kamrup, Hailakandi, Udalguri from April onwards. An inception report has been submitted as a part of the deliverables and survey tools have been finalised.





## Impact of the Bal Mitra Gram programme on the protection of child rights in the mica mining districts of Koderma and Giridih, Jharkhand

Mica is a mineral which is used vastly in electrical products, automobiles, paint, toothpaste and cosmetics. Koderma and Giridih districts of Jharkhand and Nawada district of Bihar are richly endowed with good quality mica deposits. Bal Mitra Gram (BMG)™ or Child Friendly Village (CFV)™ model of Kailash Satyarthi Children's Foundation (KSCF) is essentially a 3-5 years preventive and a curative strategy aimed at creating a child friendly world, where every child is free from exploitation, receives education, recreation and health facilities, their voices are heard and participation is ensured in an environment of friendliness, rights and dignity in the community. Since 2005, KSCF has been working in the mica villages of Bihar and Jharkhand. The programme's primary goal is to contribute to making mica mining in Jharkhand and Bihar child-labour-free, ensure children's access to education, form Bal Panchayats (Children's Council) to take up their issues of protection, health and education and ensure its institutionalisation through recognition of the Gram Panchayat (Village Council).

SIGMA Foundation was assigned to do the impact documentation of the Bal Mitra Gram programme in mica mining villages of Jharkhand and Bihar. The main objective of the study was to examine the extent to which the intervention of "Bal Mitra Gram" program has brought the meaningful results as per the envisaged theory of change for the children, their parents and associated communities. The study was majorly based on primary data following a qualitative research method approach.

The key findings of the study reported:

- The Bal Mitra Gram programme in Koderma and Giridih districts in Jharkhand was successful to a great extent in empowering the children, especially girls, through the core component of its programme intervention, the Bal Panchayat (Children's Council).
- The Bal Panchayat helped develop leadership skills in children and sharpened their decision-making abilities and played a role in providing a safe space for children in the community.
- The Yuva Mandal and the Mahila Mandal emerged as a forum to exchange ideas, discuss their social and economic problems, foster a spirit of mutual help and cooperation and work for the betterment of the community contributing towards the creation and sustenance of a child-friendly environment.

Overall, the BMG programme had made significant inroads to protect the rights of children in the intervention villages. However, the overarching dependence on KSCF for programme implementation threw a shadow of darkness on the sustainability of the programme. It was also evident that the acknowledgement and institutionalisation of the programme by the state was a non-negotiable to decide the future fate of the Bal Mitra Gram and assess the scope of scalability.





## Implementation Support Agencies (ISA) implementation under Jal Jeevan Mission (JJM) in Aurangabad District Maharashtra

### Background

As per operational guidelines of Jal Jeevan Mission (JJM) a Village Action Plan (VAP) is to be prepared for each village to achieve that goal. In Maharashtra, there are several villages within a Gram Panchayat (GP) and therefore, the VAP for a GP had to be prepared, which was based on village wise status. Considering the quantum of work, its spread, constraint of time in rolling out the JJM deliverables, the guidelines of the JJM had advocated empanelling and engagement of “Implementation Support Agencies (ISAs)” to support the GPs in the state of Maharashtra. There was need for identifying the State and District level ISAs and building their capacities for facilitating preparation of the VAPs with active involvement of the GPs for the entire district/state. Water and Sanitation Support Organization (WSSO) Maharashtra had sought the support to empanel suitable agencies to make it easier and faster for them to engage the ISAs. In this connection SIGMA Foundation had been selected by WSSO and was engaged as a district level ISA by Aurangabad Zilla Parishad, Maharashtra to implement the Har Ghar Jal component in every rural household and institutions in Gangapur block with the support of the GP functionaries. SIGMA Foundation team in Aurangabad comprises of social scientists and engineer.

Field level implementation and activities conducted by SIGMA Field Team:

- 1) Socio-economic survey: SIGMA Foundation completed the socio-economic survey for 50 villages and prepared 50 VAPs for Gangapur block of Aurangabad district. For implementing the Functional Household Tap Connection (FHTC) at the household level. The GP functionaries were oriented on the construction related issues including level of the geographical surface, underground depth, pipe quality etc.
- 2) Formation of Village Health Water Supply and Sanitation Committee: The Village Health Water Supply and Sanitation Committees were formed in entire 50 villages. During the formation of the committees the SIGMA Field Team explained the (a) objectives of this committee, (b) their roles and responsibilities, (c) the total number of the members, (d) position of the Sarpanch (President), (e) position of the Gram Sevak (Secretary), (f) reservation of the SC/ST category (25%), and (g) inclusion of ASHA workers, Anganwadi workers, (h) Youth Mandal representative and (i) Bhajani Mandal representatives were considered as the committee members.
- 3) Water quality testing using Field Test Kit (FTK): The committee members (mostly women) were trained for using the FTK at the village level to check the drinking water quality (chemical and bacteriological) status at the consumer end. For this, 5 women per village were selected and total 250 (50x5) women and one Jal Surakshak per village got the training and achieved the 100% target of conducting the water quality checking through FTK before monsoon.
- 4) Online registration for FTK and TDS: Importantly the online registration for FTK user and the water quality measuring parameters are mandatory under JJM web portal as per GOI norms. In this context, the team completed 100% registration (1759) under the JJM portal and considered a significant achievement as well.
- 5) Training for pump operators/fitters: Around 205 pump operators, fitters, and masons were received the technical training by the SIGMA technical team. A detailed guidance was also given on operation of valve system, operation, and monitoring (O&M) of the supply scheme, and proper maintenance of the water pressure and hydraulic testing.



6) VWSC Bank account: Total fifty (50) VWSC (Village Water and Sanitation Committee) (100%) opened their bank account as per GOI norms.

7) Tap water connection in schools and Anganwadi: Besides the household tap connection JJM also emphasised the water supply connection at the institutional level like schools, anganwadi etc. With the field support of SIGMA Team in the project villages, out of 52 schools, 48 (92.31%) got the tap connection and out of 65 anganwadi, 51 (78.46%) got the tap connection for supplying safe drinking water as per GOI norms. Further, the work for functional tap connection for rest of the schools and anganwadis are in progress.

8) Rigorous IEC activities at village level: The awareness was generated in 50 villages regarding tap water connection and supply of safe water for maintaining healthy life. In this connection 750 IEC activities were conducted through Gram Sabha's, street corner meetings, training, home visit and message dissemination through WhatsApp group.

9) 100% FHTC Villages: Due to the rapid progress of the 50 project villages, 17 (34%) villages already got the tap connections and that in the rest 16 villages are under progress with the support of SIGMA Foundation.

10) Haar Ghar Jal Declared Villages: The support and facilitation received from SIGMA Foundation, 12 villages of the Gangapur taluka were declared as Har Ghar Jal village in their Gram Sabha meeting and uploaded the certificates on the website of Ministry of Jal Shakti.

11) 10% People's Share: Villagers are paying as per their own capacity. This amount has been deposited in the VWSC account for maintenance.

12) Geo-tagging: The geo-tagging of 210 villages in Gangapur taluka was completed by SIGMA Foundation in a systematic way.

13) Documentation: A proper documentation has also been done for the 50 project villages where (a) resolution files, (b) public contribution file, (c) list of online skilled labours, (d) meeting registers, (e) MPR files, (f) Government letters, (g) training files, (h) village wise socio-economic information, and (i) photos for various activities and awareness campaigns were preserved for future of action.

SIGMA Foundation as an ISA, successfully completed this project within one year (2022-23) as per project TOR.





## Presentation in international forum/Seminar

- Dr M. N. Roy was invited as a Civil Society engagement expert to present the lessons learnt in the virtual workshop for **ADB-CSO engagement in South Asia**. SIGMA Foundation has done exemplary work in facilitation of the ADB assisted piped drinking water supply project in Bankura district, for which SIGMA Foundation was the NGO Contractor. The experiences of working with the community and the Panchayats was presented in the workshop held on the 14th February 2023 and he was the only speaker from India.
- **“Strengthening Sanitation System in the Rural Areas in Post-Pandemic era: A Study on Gram Panchayat Development Plan (2022-2023) of Some Selected GPs of Different States of India”**, presented by Dr. Sabari Bandyopadhyay at International Conference on Contextualising Health in Social Sciences: Global and National Perspectives, organized by Sharda School of Humanities and Social Sciences in collaboration with Indian Association for Social Sciences and Health (IASSH), held at Sharda University, Greater Noida, during 15-17th March 2023.

## Publication by members of SIGMA Foundation

### Research articles

1. **“Municipal Solid Waste Estimation and Management—Challenges and Lessons from Regional Studies of West Bengal (India)”**. Dr. M.N. Roy, Dr. Debasri Mukherjee, Dr. Sanghamitra Kanjilal-Bhaduri, Sonia Nandi, Riyanka Ghosh, Ruby Yogi. The Journal of Solid Waste Technology and Management (Formerly The Journal of Resource Management and Technology (Volumes 12-22) Formerly NCRR Bulletin (Volumes I-II). November 2022 ISSN: 1088-1697. Volume 48 Number 4. Page 532-547.
2. **“Understanding the gap between knowledge and practice of handwashing in rural India: evidence from a cross-sectional study”** 2022 – Chatterjee S, Roy M.N. Banerjee K, Mojumdar S, Osbert N. Journal of Water and Health IWA, Vol 20. No 12, 1701 doi: 10.2166/wh.2022.129

### Case studies

1. **“Jaladhi Jal Prakalpa: Transforms Chandai Village of Bankura District in West Bengal (A Case Study)**. Mukherjee, D. Roy, M.N., & Tarafdar, Sohini. Everything About Water Journal (Annual Issue of Collector’s edition-14th edition). <https://www.eawater.com/eMagazine/>. January 2023.
2. **“Pots of Water Burden: A Case Study on Water Scarcity in Chaknada Village of Puruliya District in West Bengal”**. Tarafdar, S., Roy, M.N., Mukherjee, D. Everything About Water Journal (Annual Issue of Collector’s edition-14th edition). <https://www.eawater.com/eMagazine/>. January 2023.

Photo Courtesy: Rupam Mondal, Sangram Mukherjee, Ritaban Mitra, Maharashtra Field team



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+91 33 2324 2077



[info@sigma.foundation](mailto:info@sigma.foundation)



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AI-17I, 1st Floor, Street No. 29, Action Area-I, New Town, Kolkata-700156



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## Branch Office

Address: Plot No. 26, Shambhu Mahadev Colony, New Osmanpura, Aurangabad – 431005





