



HAND IN HAND INDIA



SPROUT

**Hand in Hand India's
Climate Interventions**



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Chairperson's Message

Climate Change is real and we are already witnessing its effects in recent years, with 2023 being the hottest year ever recorded, and 2024 expected to be even worse. The underlying causes are completely anthropogenic, leading to an international treaty by the United Nations member countries called The Paris Agreement – to limit the temperature increase to 1.5°C above pre-industrial levels. In this milieu, it is imperative for us to work together in fighting the challenge climate change and its adverse effects pose.

We, at Hand in Hand India, have been conceiving and implementing multiple Climate Action initiatives since 2007 under our Environment pillar, branched into Natural Resource Management and Sustainable Waste Management.

Water and soil conservation, climate resilient agriculture, carbon sequestration, ecosystems development, municipal solid waste and plastic waste management, waste-to-energy and green enterprises are the focus areas, which demonstrate our climate change mitigation and adaptation strategies.

However, all our focus areas converge on a dedicated goal – poverty alleviation. Creating and strengthening agriculture infrastructures, training and capacity building farmers and women in allied activities, and developing market linkages for sustainable sales increase the productivity and income of the beneficiaries while upholding the essence of environmental conservation by means of encouraging traditional methods along with technological support. This integration helps in building climate resilience.

Another binary approach which makes our environmental projects successful is our disposition towards need-based planning, and also factoring in poverty's multidimensionality among the target groups. This enables our environmental projects to be replicable and scalable.

I urge our passionate team with expertise in environmental conservation to continue to excel in this sphere and turn communities into truly resilient ones capable of withstanding and flourishing amidst increasing climate change impacts.



Dr. Kalpana Sankar





Hand in Hand India is a not-for-profit public charitable trust based in India working since 2004 towards poverty alleviate through job creation. Our 'job creation' model targeting multiple spheres viz. women empowerment and job creation, child labour elimination and education, access to affordable healthcare, skill development & technology centres, environment – sustainable waste & natural resource management and village uplift programme has been successfully implemented in 20 states across India since 2004. The unique 'job creation' model has been replicated in countries such as Afghanistan, South Africa, Switzerland, Brazil, Myanmar, Cambodia and Sri Lanka.



CONTRIBUTING TOWARDS CLIMATE ACTION AND SUSTAINABLE COMMUNITIES

Changing weather patterns, increased extreme weather events, rise in sea level and greenhouse gas emissions are displacing millions of people, affecting livelihoods and disrupting local economies. According to the UN High Commissioner for Refugees (UNHCR) analysis, it is estimated that, on average, 21.5 million people have been displaced by climate or weather-related events each year since 2008. Climate change directly impacts agricultural yields as major staple crops fell by 40 mega tonnes per year between 1981 and 2002 because of the warmer climate. By 2030, it is estimated that adaptation costs will range between US\$ 140-300 billion per year.

Overcoming these challenges posed by climate change led to the adoption of Sustainable Development Goals (SDGs) by the United Nations, agreed upon by the member countries. The SDGs are comprehensively set, with focus on food security, sustainable agriculture, livelihood opportunities, gender equity, poverty alleviation, and ecosystem restoration among other focus areas. The Paris Agreement at COP 21 reiterated the urgency for global actors to come together and scale up global responses in combatting climate change through Climate Action.





Agriculture, food, nutrition, hunger and poverty are all intricately connected. Hand in Hand India's footprint has a broad spectrum with interventions in various developmental spheres. Committed to integrated community development, Hand in Hand India understands the interconnectivity of nutritious food, improved health, healthy micro-ecosystem and a resilient community. Hand in Hand India's developmental interventions during initial years were based on the eight Millennium Development Goals (MDGs) declared in 2000. Post 2015, when the MDGs expired, the new global development agenda – Sustainable Development Goals carried the momentum, paving the way for Hand in Hand India to widen its vision with enhanced objectives and targets through an integrated approach to develop sustainable communities. The five-pillar strategy works on the aforementioned connected spheres separately and also through an integrated approach by combining all pillar activities into one - the Village Uplift Programme.

Hand in Hand India's climate action interventions are marked by the environmental conservation measures rooted in the rural regions of India. In various rural pockets, a sustainable, integrated approach has been established creating a durable system to withstand the vagaries of climate change.

The systematic approach encompasses:

Watershed interventions

Check dams, bunds, diversion drains to capture and store run-off water and utilise it for agriculture and domestic purpose.

Water storage & irrigation interventions

Ponds, irrigation tanks, bore wells and recharge pits to store the rainwater, as well as aid groundwater recharge (including aquifers) to support irrigation in water scarce regions.

Climate resilient agriculture

Integrating traditional farming methods (including organic farming) with agro-forestry, intercropping methods and drip irrigation, coupled with green livelihoods such as beekeeping, rearing milch animals, vermicomposting practice & poultry to develop sustainable micro-ecosystems.

Agriculture infrastructure & capacity building

Agro-processing unit & Farmers Producer Companies enable farmers to process their produce to improve better shelf life & market value. Collaboration with govt. agriculture departments and private organisations established for training & skill building on various farm and non-farm based livelihood activities & opportunities.

Women health & hygiene

Women are major players in agriculture, both as labourers and smallholder farmers. Upkeeping women's health & hygiene is important for a healthy agriculture system which will enable an uninterrupted economic flow. To fulfil this aspect, Self Help Groups (SHGs) are formed to empower women (for significant development in local economy), training and sessions are conducted on maternity, reproductive and child health, and nutrition supplements are provided.

In urban, semi-urban & rural regions, Hand in Hand India's focus areas are

Municipal Solid Waste Management

To manage wastes generated by the community through collection, processing and disposal of waste based on comprehensive and contemporary waste management methods along with Behaviour Change Communication (BCC) interventions.

Clean Development Mechanism (CDM)

Create renewable energy (biogas & electricity) out of waste, and plastic waste recycling leading to a circular economy; establishing renewable energy systems in villages both for domestic and agriculture needs.

Green Enterprises

Developing eco-friendly enterprises to produce green alternatives for single-use plastic products such as cloth bags, leaf plates and cutlery, etc.

Water security in drinking water scarce areas

Water harvesting structures and soak pits to recharge aquifers and groundwater.

Transforming our agriculture practices into sustainable, resilient systems capable of withstanding climate vagaries will produce nutritious food for the community and create sustainable livelihoods for small-scale farmers and agricultural labourers. In the urban setup, Hand in Hand India's actions reduce Greenhouse Gas (GHG) emissions through contemporary waste management solutions, create circular economy, and reduce the environmental stress cities face in the ways of massive influx of people, their growing demands for sophistication and congested urban space.

Hand in Hand India's environmental conservation projects are therefore a part of the greater climate action envisaged to strengthen communities through engagement and safeguard local ecosystems.

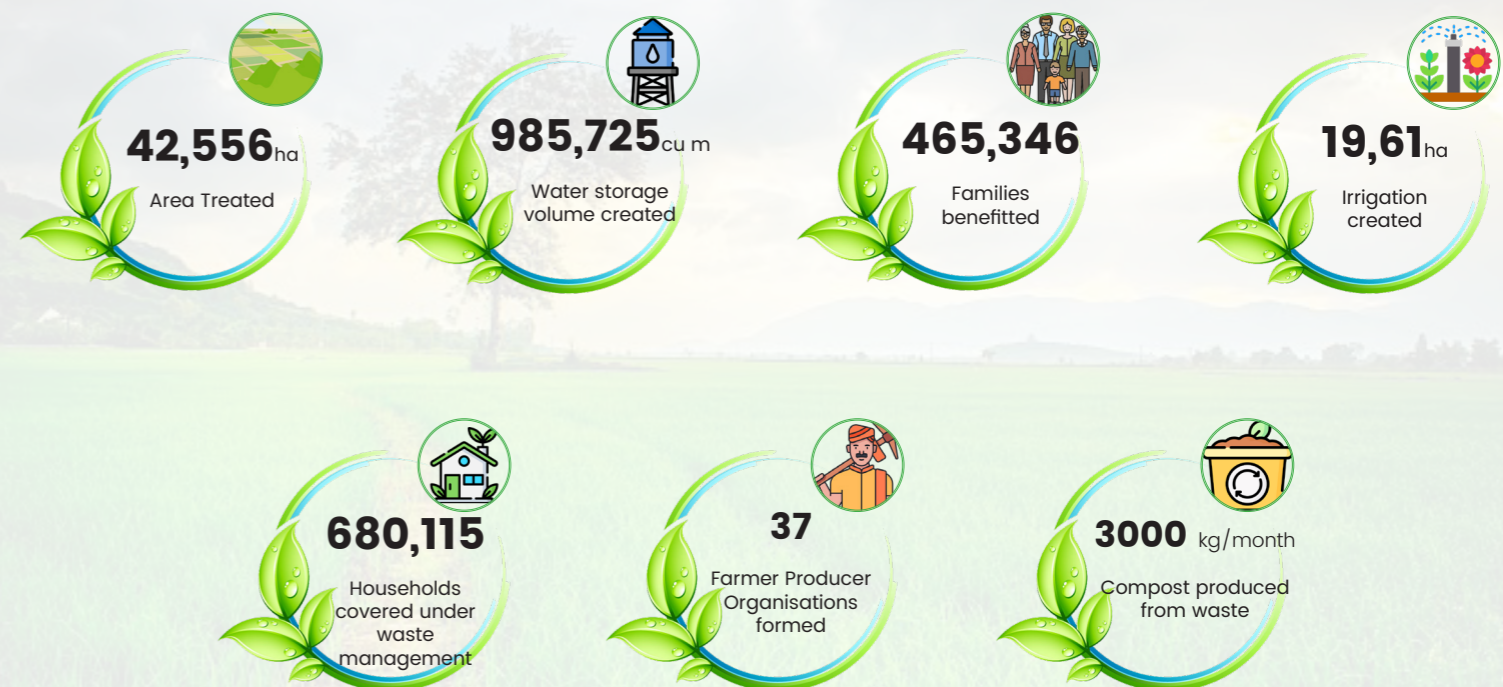


CLIMATE ACTION

Hand in Hand India's environment pillar aims at conserving the environment in every way possible - recovering resources from waste, sustainable waste management solutions and promoting renewable energy - handled by Sustainable Waste Management Programme; restoring and creating water resources, creating green livelihoods, reshaping agricultural ecosystem orienting on symbiotic eco-regeneration, climate change adaptation, and farmer-friendly market linkage - handled by Natural Resource Management Programme.



Overall Impact



Developing
WATER SECURITY



BUILDING WATERSHED AND FLOOD MITIGATION INFRASTRUCTURE

Pommampatti Village, Madurai District, Tamil Nadu

Project Period: August 2017 – July 2019



A small hamlet of 67 families in the Madurai district of Tamil Nadu, lack of water for irrigation due to poor infrastructure pushed most families into poverty as they relied on agriculture for livelihood. Facing drought in recent years exacerbated the plight, pushing them out of the hamlet in search of livelihoods. Moreover, the village gets cut-off from access to basic amenities in nearby town during floods.

Hand in Hand India came up with an integrated approach to solve these issues and turn Pommampatti into a lush green village with better connectivity. Major interventions in the village were

- ✿ Renovation of old pond and creating new pond with a total storage capacity of 15,600 cu m leading to rainwater storage and groundwater recharge, which helps the agricultural lands in the hamlet.
- ✿ Building a bridge across the stream in the hamlet to access nearby town as a flood mitigation measure. During rains, the hamlet used to be cut-off from the mainland, and there were accidents and loss of life while wading through the stream.
- ✿ Masonry Check Dams (four no.) across the main stream to retain rain and flood water. Each dam can hold 2,000 cu m of water (avg.), with a combined capacity of 8,000 cu m aiding agriculture and domestic use in the hamlet in the form of stored runoff water and ground water through recharge.
- ✿ To rectify the drinking water shortage issue faced by the residents, who usually buy water for a five-month period every year, a bore well was set up along with a 2000-litre storage tank, with support from the local government.
- ✿ 15 Individual Household Latrines (IHHL) were constructed (ten IHHLs under Total Sanitation scheme), wherein targeted beneficiaries were adolescent girls in those households to maintain personal hygiene and safety.
- ✿ Developed climate resilient agriculture with the incorporation of 20 irrigation tanks, initiating organic farming, crop diversification including agroforestry and nursery, green livelihoods creation like beekeeping, milch animals and auxiliary enterprise activities to keep the families engaged and paved way for better income.
- ✿ In the aspect of energy use, households were provided with smokeless Chulhas for safe cooking, energy efficient LED bulbs to reduce utility bills of households, solar-powered street lights, and a green energy driven community hall.
- ✿ Training and skill building on various skills like farm-based livelihoods, non-farm livelihoods, health, sanitation, sustainable agriculture production technologies, kitchen garden, and drip irrigation completes the project intervention.

URBAN LAKE RESTORATION

Injambakkam, near Chennai, Tamil Nadu
Project Period: August 2019 – March 2020

Injambakkam, a Chennai suburb along the East Coast Road, used to have 15 ponds. Rapid urbanisation in recent years eradicated all ponds in the locality except the Gangaiamma Kovil Pond. On the verge of extinction due to encroachment and defunct maintenance, the renovation work was entrusted to Hand in Hand India based on our expertise in water conservation intervention.

Upon survey, it was observed that the entire pond was infested with weeds and water hyacinths; banks and bunds were dilapidated; heavy contamination due to sewage water inflow; encroachments and miscreants along with lack of lighting made the pond a risky place for people.

Post restoration, through silt and weed removal, pond deepening and bund strengthening, the pond retained its original capacity of 10,000 cu m. New pathways, complete fencing, benches, ten solar lights, 500 ornamental plants and trees, and lawns instilled an aesthetical refinement well appreciated by the local community and Greater Chennai Corporation. To ensure sustainability, a committee with 13 members was formed, and a revenue generation mechanism was developed by means of fish sales from the pond.

The integrated approach stands out in every way – improving groundwater recharge, creating a leisure space for the locals, exemplifying partnership with government, private and other stakeholders, and developing a micro ecosystem.



RESTORING TRADITIONAL WATER BODY

Singadivakkam, Kancheepuram District, Tamil Nadu
Project Period: June 2018 – May 2019

Residents of Singadivakkam village often faced water issue. The ponds in the village which fulfilled every purpose of the villagers i.e. drinking water, domestic use, agriculture and livelihoods, did not support much due to negligence. Having restored the cattle pond in the village previously, Hand in Hand India took up the restoration of traditional pond used for drinking water. Spread across 2.6 acres, pond was filled with silt, surrounded by vegetation which blocked the supply channels of the pond.

Starting with silt and weed removal, the pond was deepened and the bunds were strengthened. For ease of access, walkways, green cover, fencing, benches, solar lights and steps leading down to the pond were created. The unique method introduced here was the filter well construction right inside the pond. The well acts as a source of clean drinking water for the villagers throughout the year and negates any additional filtering mechanism. Surplus weirs control overflow and flooding during rainy season. The 210-families strong Singadivakkam village have adequate water source now due to this unique water conservation initiative.



BUILDING WATER SECURITY

Rameswaram, Ramanathapuram District, Tamil Nadu

Project Period: April 2020– April 2021



The project goal was to build water security through collective measures in Rameswaram Island, comprising of Rameswaram Municipality, Thangachimadam Village Panchayat and Pamban Village Panchayat. The project was implemented across 49 wards in the Island – 21 in Rameswaram Municipality, 13 in Thangachimadam Village Panchayat and 15 in Pamban Village Panchayat. Through this project, 16,841 beneficiaries were reached directly and about 73,000 beneficiaries indirectly.

Hand in Hand India, with support from Green Rameswaram–Vivekananda Kendra Natural Resources Development Project (VK-NARDEP) who coordinated the project, and Indian Institute of Technology (IIT)-Madras who supported in water security mapping through its International Centre for Clean Water (ICCW). Serious absence of clean drinking water sources apart from rainwater, groundwater being contaminated majorly due to salt water intrusion and other causes, remains an issue in the island.

were implemented to safeguard the drinking water needs of the local and the visitors:

- ✿ Reverse Osmosis (RO) drinking water units of 500 litres per hour capacity with storage tanks were installed in ten locations across the island.
- ✿ Water conservation activities: 22 soak pits as community rainwater harvesting structures which also recharges groundwater near RO units, and soak pits prepared at the backyards of 100 households to recharge groundwater. Installation of individual rainwater harvesting structures for 25 households (20% beneficiary contribution) and 25 community buildings saves 12,000 liters of water annually. Two new wells were created to aid water security in the island.
- ✿ To utilise food waste, 20 households were supported with 1 cu m biogas units and four schools with 6 cu m biogas units. The gas is used as cooking fuel now, especially to serve mid-day meals at schools



CHHURCH WATERSHED DEVELOPMENT PROJECT

Gulthuni Village, Shivpuri District, Madhya Pradesh

Project Period: March 2019 – September 2020

Shivpuri is one of the drought prone districts in Madhya Pradesh. Poverty is high here as the area relies on rain-fed agriculture for livelihood. Poor soil and water management further aggravated the issue.

Watershed development in the area was the perfect solution to reduce the plight of the communities. Hand in Hand India, with support from NABARD, initiated its watershed development intervention wherein Gulthuni village with 447 households was targeted to ensure sustainable livelihood through conservation of natural resources.

The project included the following activities in the village:

- ✿ Four farm ponds created
- ✿ 15 field bunds developed
- ✿ Ten well recharge pits constructed
- ✿ 18 check dams (12 loose rock & six gabion) constructed
- ✿ Six diversion drains developed to avoid water logging in farm lands
- ✿ 2,555 agroforestry saplings and 2,620 horticulture saplings distributed

In total, 94 ha land got treated; 4,012 cu m water storage has been developed; 412 families were benefitted.





Creating
**RESILIENT
COMMUNITIES**



CREATING SUSTAINABLE LIVELIHOODS

The Pachamalai Tribal Development Programme, Tamil Nadu

Project Period: 2015–2022

The project with NABARD aims to improve the socio-economic development of the tribal people of Pachamalai Hills by developing an integrated development model with relevant support systems to sustain the development. The project covers 41 villages in Trichy & Salem districts of Tamil Nadu covering 1,322 acres of land area.

The project encapsulates,

Sustainable agriculture:

- a) Orchard promotion using Horti-Agri-Forestry, an innovative inter-cropping and block plantation to ensure soil quality and high yield. Forest trees such as Silver Oak and Teak along with Cashew and Mango were promoted covering 1, 150 acres.
- b) In collaboration with National Coffee Board, coffee plantation was promoted in 100 acres along with other crops such as pepper, potato and pineapple, thereby developing an intercropping pattern.
- c) Support systems like promoting organic farming by setting up Organic Farmers Group, and improving technical know-how of farmers with the Department of Agriculture and Horticulture and Krishi Vigyan Kendra (KVK). Capacity building exercises such as technical training to WADI farmers, exposure visits to farms and research institutions review meetings were conducted frequently.

Water conservation: Field bunds (trenches across slopes to harvest rainwater), stone bunds and tree platforms helps in micro-level water storage in farms and arrests top soil erosion. 11,585 field bunds were created. Farm ponds, trenches and water tanks help agriculture; provide drinking water and supports domestic water use.

Green Livelihoods Promotion: INR 10 lakhs loan assistance for SHGs and farmers on agriculture support systems like irrigation infrastructure, alternative irrigation systems, fencing, etc. Grant assistance to take-up beekeeping, nurseries, vermicomposting units, poultry, milch animals, etc.

Women Health and Hygiene: Formation of SHGs for women empowerment, providing smokeless Chulhas, training on maternal & child health, family planning and reproductive health, providing nutrition supplement in the form of health mix were the major activities.

Collaboration: National Coffee Board (coffee plantation in 100 acres), National Bee Board (scientific training on beekeeping), Virudhachalam Cashew Research Station (trial of VRIHI variety in 30 acres), Tamil Nadu Veterinary University, Namakkal (technical assistance for poultry, piggery and fishery), and Horticulture Department (technical training).



CREATING SUSTAINABLE LIVELIHOODS

Jawadhu Hills Tribal Development Programme, Tamil Nadu

Project Period: 2014 – present

Jawadhu Hills located in Tiruvannamalai district of Tamil Nadu is home to 52,000 tribal people in 273 hamlets. Rain-fed traditional farming in the hills, the basic livelihood of these people, was challenging in recent years due to erratic and scant rainfall, soil erosion, drought, and ecosystem degradation. To recover the people from this dire situation and arrest the practice of migration for menial jobs, Hand in Hand India started implementing development interventions based on its integrated development approach with the support of NABARD.

The results have been:

- ✿ 3,283 ha area treated by soil and water conservation measures such as check dams, farm ponds, percolation ponds, catch pits and trenches, facilitating surface water availability in 58.8 ha and harvesting 1,20,200 cu m rain water annually. This aided in bringing 154 ha under irrigation.
- ✿ *Climate resilient agriculture:* 315 ha land turned to multi-cropping system; 240 ha introduced with high value crops benefitting 2,400 farmers (10-fold to 100-fold income increase); 275 ha barren land brought under cultivation; created 450 ha dry land orchards benefitting 1,100 families.
- ✿ *Green Livelihoods:* 500 farmers organic certified; 100 poor landless farmers/widows facilitated milch animals worth INR 50,000–1,00,000 each. 300 families trained in beekeeping; 420 families prevented from migrating by providing livelihood options and capacity building through skill development. 1,030 green enterprises have been created.
- ✿ *Support systems:* Setting up of Agro Processing Centre and creating Jawad Hills Organic Farmers Producer Company Limited (JOFPC), a farmer organisation, to strengthen, sustain and promote organic farm produce, and to develop market linkages to market the produce.



CLIMATE RESILIENT INTERVENTIONS

Sanand, Ahmedabad District, Gujarat

Project Period: April 2021 – March 2024



Hand in Hand India's integrated project in Sanand located in Gujarat exemplifies multiple developmental activities, with climate resilient farming methods an integral part of it. The uniqueness of the project is its target group – women.

Farm level drought/flood management and low-cost water saving techniques were the focal points. Building farm ponds and installing drip irrigation system fulfilled the farmers' requirements, as the village was subjected to the vagaries of changing climate pattern and lack of technical know-how to overcome the challenging situation. But the interventions of Hand in Hand India changed both the agricultural and belief system of the villagers.

- ♣ Ten families benefitted from new farm ponds as a part of drought/flood management.
- ♣ Ten families supported with drip irrigation system.
- ♣ 36 farmers adopted organic farming and 20 farmers adopted soil health enhancement methods.
- ♣ 111 farmers adopted alternative & mixed cropping (agro-forestry) and less water intensive cropping methods.
- ♣ 100 farmers trained in climate resilient technologies.
- ♣ 100 farmers benefitted from the new weather station setup to adapt agriculture to changing climate pattern.



SOLAR-OPERATED BORE WELL FOR MIGRANT TRIBAL PEOPLE

Thiruvanaikovil, Chengalpattu District, Tamil Nadu

Project Period: May-July 2018

A small group of tribal people, 60 families to be precise, live in Thiruvanaikovil hamlet, located in the Chengalpattu district of Tamil Nadu. Most of these people are migrant labourers and are poor. Like most, this poor community faced drinking water issue due to unavailability of source. They used to buy water costing them considerable amount, owing to their poor financial background. Even for domestic purpose, a private well at a distance of 500 meters remains tough to access due to its proximity to a temple and the condescending attitude of the locals.

To aid this community, Hand in Hand India setup a bore well (400 ft deep) and a storage tank (2,000 litres capacity). The bore well is operated by a motor pump driven by solar energy. This initiative helped the community save money spent on drinking water needs and reduced drudgery of women who spent hours and humiliation to access water.





MITIGATING THE PLIGHT OF RURAL WOMEN – SMOKELESS CHULHAS

Kadadhe Panchayat, Pune District, Maharashtra
Project Period: 2020-2022

The National Programme on Improved Chulha (NPIC) 1986-87 & Unnat Chulha Abhiyan 2014 envisages clean cooking energy with higher efficiency and lower emissions. Hand in Hand India works towards affording eco-friendly stoves to the poor, rural communities.

Kadadhe is a village with 280 households in the rural part of Maharashtra. Women here mostly were accustomed to traditional Chulhas collecting firewood from nearby areas. Constant exposure to smoke and spending significant time in cooking developed health issues among the women. Additionally, it remained a hindrance to focusing on livelihood opportunities. To overcome this, 20 smokeless Chulhas were provided to ensure smokeless cooking. Another intervention was providing LED tube lights to 150 families, based on the UJALA Scheme of Govt. of India to promote energy efficiency. Those LED lights replaced the excess power consuming tungsten bulbs and help the families save money in electricity charges every month.

Similarly, 140 smokeless Chulhas in total were distributed among families in rural Maharashtra and Gujarat.

AUTOMATIC WEATHER STATION

Tamil Nadu, Rajasthan and Gujarat

Hand In Hand India and NABARD collaborated to install Automatic Weather Station (AWS), to monitor weather phenomena for forecasting, climatology, and research, and providing agro-advisory services. The AWS comprises components to measure, record, and transmit weather parameters like temperature, wind speed, solar radiation, and precipitation. It offers crop advisory for farmers through SMS and voice calls in local language, sharing rain alerts every three days with high accuracy. The data aids farmers in making informed decisions for irrigation, planting, weeding, and harvesting, and recommends suitable crops based on forecasting. Approximately around 2,000 farmers benefit from the AWS and crop advisory messages, reducing manpower costs, avoiding unnecessary irrigation, and optimising crop selection. The system's ease of use and adaptability makes it a valuable tool in simplifying agricultural practices, empowering farmers to make better decisions and find ideal solutions, ensuring sustainable agricultural practices and improved livelihoods.



Sustainable
WASTE MANAGEMENT



WAVES OF CHANGE – COASTAL WASTE MANAGEMENT AND GREEN ENTERPRISE DEVELOPMENT

Location: Greater Chennai Corporation and Chengalpattu District, Tamil Nadu
 Project Period: August 2020 – December 2023



SUSTAINABLE DEVELOPMENT GOALS

The Waves of Change project focused on a) reducing plastic waste at sea and on land, through preventive measures and improved plastic and waste management processes with specific focus on single-use plastic waste, b) Creation of green enterprises to produce alternatives for single-use plastic products and profitable small businesses, thereby promoting circular economy, and c) Behaviour Change Communication intervention to sensitise fishing communities on the effects of plastic waste on coastal environment and the need to switch to eco-friendly practices.

13 coastal villages in the 35-km stretch of ECR spanning from Sholinganallur (Greater Chennai Corporation) to Mamallapuram with a total of 8,555 households were targeted.

- ✿ An All-Terrain Vehicle (ATV) was engaged in regular beach cleaning activities along the 13 coastal villages. Green Friends (sanitation workers) engaged in this activity collected 30 metric tonnes of single-use plastic waste during project period.
- ✿ Six local recycling facilities were strengthened, for efficient single-use plastic waste disposal to end-chain - cement kiln as an alternative fuel. As a result, 2,466 metric tonnes of single-use plastic waste was sent to cement kilns and utilised as alternative fuel.
- ✿ 525 awareness activities sensitised 26,906 people on plastic pollution and plastic waste management.
- ✿ 76 beach cleaning campaigns were conducted involving multiple stakeholders.
- ✿ 34 informal rag pickers from marginalised communities were turned into Recycling Assistants to collect plastic waste in project locations, collecting 301 metric tonnes in total.
- ✿ 293 Green Enterprises created viz. cloth bag stitching unit, Areca plate making unit and Sal leaf plate making unit, to promote circular economy and reduce plastic pollution. 487,000 cloth bags, 15,300 Areca plates and 5,150 Sal plates were manufactured earning sustainable income for the enterprises.
- ✿ 1,212 SHG women were educated on enterprises, 302 SHG women were trained in enterprise development, and 674 SHG women were trained in sewing machine operation, Sal leaf plate making, Areca leaf plate making, plastic upcycling and craft training.
- ✿ Innovative interventions such as Blue Post Boxes, PET bottle signage boards, PET bottle crushing machine, reflective stickers, and plastic collection kiosks enabled both waste collection and awareness creation.
- ✿ PET Bottle Crush Challenge and QR code banner quiz on plastic waste management – tech-oriented awareness activities engaged and sensitised multiple stakeholders.
- ✿ 2,400 fishermen received specially designed net bags to collect and store plastic waste in the sea.
- ✿ 25,000 cloth bags distributed in target locations.
- ✿ 1,000 stainless steel water bottles and 4,900 cloth bags were distributed among school students.
- ✿ Seminar and competitions on plastic waste management engaged 3,602 school and college students.

MUNICIPAL SOLID WASTE MANAGEMENT

Karaikal Municipality, Karaikal District, Puducherry Union Territory
Project Period: November 2016 – January 2023

With over 25,000 households, Karaikal Municipality generates more than 40 MT waste every day. Our Recycle for Life project since 2016 brought a significant change in the management of municipal solid waste, previously known to be a menace for the residents. The project envisaged a clean town rid of waste from streets and waterways, and achieved 100% door-to-door waste collection, 56% segregation of waste at source and 80% waste diversion from reaching landfills. For the work, Hand in Hand India was recognised with Best Civil Society Organisation at the 8th Regional Forum in Asia and Pacific in 2018. The project also actively involves in Swachh Bharat Mission and participates in Swachh Survekshan survey by the Govt. of India.





SOLAR-POWERED RESOURCE RECOVERY PARK

Akhod Panchayat, Bharuch District, Gujarat
 Project Period: November 2018 – March 2021



SUSTAINABLE DEVELOPMENT GOALS

Promoting green energy at varied platforms is a unique approach of Hand in Hand India. One such platform is Resource Recovery Park (RRP). The RRP at Akhod panchayat handled solid wastes generated in the village every day, and with machinery in place to treat waste, the RRP consumed considerable amount of energy. As an eco-friendly measure, Hand in Hand India installed a solar energy harvesting system to feed the RRP. The entire RRP, including shredding and baling machines and other energy requirements was run by solar energy. The local community too contributed by handing over wastes to the waste management team.

WASTE-TO-ENERGY: GENERATING BIOGAS FROM FOOD WASTE

Mamallapuram, Chengalpattu District, Tamil Nadu
 Project Period: 2010 – 2024

SUSTAINABLE DEVELOPMENT GOALS



Setup in Mamallapuram Special Grade Town Panchayat, a historical town with UNESCO declared heritage sites, the biogas units with a combined capacity of 150 cu m produced biogas every day using food and meat waste. The resultant gas was converted into electricity using a generator, feeding 40 street lights along the East Coast Road near the town.

Similar units were established at - Officers Training Academy (OTA), Chennai, with 100 cu m capacity (cooking fuel for canteen), at Cantonment Board Park, Pallavaram, with 100 cu m capacity (to power park lights), and individual units for families from marginalised communities.

38 biogas units with a combined capacity of 706 cu m have been installed by Hand in Hand India.



MUNICIPAL SOLID WASTE MANAGEMENT

Harola Urban Village - Noida, Gautam Buddha Nagar District, Uttar Pradesh

Project Period: June 2019 - July 2021

Harola Urban Village of Sector 5, Noida, is a settlement mostly housing migrated labour workforce. Harola posed a unique challenge, as 20,615 households are located within a 0.23 sq km area. The project handled about 7 MT waste every day including door-to-door waste collection, street sweeping (also night shifts), and Behaviour Change Communication (BCC) activities. Open drain cleaning was implemented simultaneously handling around 3 MT (average/day).

The project achieved: -

- ✿ 100% door-to-door collection (distribution of twin bins for households and commercial entities to store organic waste and non-biodegradable waste aided the collection) on a daily basis.
- ✿ Sensitised residents through 183 events like rallies, door-to-door campaigns, competitions for students, puppet shows, awareness boards, Nukkad Nataks, wall arts & slogans, waste-to-art displays, etc.
- ✿ Placed 15 sets of twin bins for waste collection in public places.
- ✿ Eliminated all five Garbage Vulnerable Points (GVPs) in Harola.
- ✿ Frequent cleaning of open drains.



WORKING TOWARDS A ZERO WASTE CAMPUS

Indian Institute of Technology (IIT), Hyderabad, Telangana

Project Period: March 2020 - present



SUSTAINABLE DEVELOPMENT GOALS

The project at this prestigious institute involves in establishing a proper waste management within the campus, sprawled across 640 acres. This includes door to door waste collection, transportation, processing of waste, setting up of Resource Recovery Park, a Biogas unit to handle the food waste from canteens and households, and an incineration plant to handle the inert and other mixed waste. The project caters to a population of about 3500, and handles wastes of about 1.4 MT/month from its four academic buildings, residential quarters with 255 households, ten student hostels, central mess, canteen, Sewage Treatment Plant (STP) and the campus vegetation. More than 70 percent of waste generated in the campus is getting diverted from reaching open landfills.

Activities towards achieving a zero waste campus:

Organic waste: Around 15 MT of waste is handled every month. The waste is converted into organic manure through bio composting and vermicomposting methods at the Resource Recovery Park (RRP) setup inside the campus. The manure, in turn, is utilised for the vegetation inside the campus.

Food waste: Food waste is majorly generated by the central mess present in the campus. To treat the 10 MT (avg/month) of waste, a biogas unit with the capacity to treat 450 kg/day waste has been setup. The resultant biogas acts as fuel for the mess kitchen, which consumes about 69 cu m (avg/month) gas.

Recyclable waste: Recyclable waste is segregated category wise at the RRP, stored and sent to authorised local recyclers periodically. Every month, around 3 MT of waste is treated under this activity.



Towards
GREEN ENERGY



இயற்கை எரிவாயு கலன்
BIO-GAS PLANT
சுழிவுகழை தரம் பிரிப்பெண் 1 உயிர் எரிவாயு பெறுகோம்
தய. நிறுதல் **SBI general**
SBI GENERAL
SBI GENERAL



GREEN HERITAGE MAMALLAPURAM

Shore Temple, Mamallapuram, Chengalpattu District, Tamil Nadu

Project Period: April 2022 – March 2024

The Shore Temple located in Mamallapuram, built around 700 AD, is a UNESCO declared World Heritage Site maintained by the Archaeological Survey of India. The temple attracts around 3,000 local and global visitors every day, to witness its architectural beauty. A unique intervention to makeover and preserve this campus furthermore is the 'Green Heritage Project' implemented by Hand in Hand India. This marked the momentous achievement of The Shore Temple complex becoming the first 100% solar run Cultural World Heritage monument in India.

- ✿ 30 kW capacity solar power unit turned the campus into the first ever 100% grid-free heritage site in India. Excess power is getting transferred to the grid, contributing to the green energy cause.
- ✿ Three solar-powered E-Carts are run by trained women drivers as shuttle free of cost to support elderly, differently-abled and pregnant women to traverse the campus.
- ✿ 500 liters per hour capacity drinking water unit with three water kiosks setup in the campus offers visitors clean drinking water.
- ✿ Beautification like stone benches, user-friendly initiative like signage boards and improved vegetation with lawns and avenue trees have turned the campus into a lush green landscape with a great ambience.
- ✿ Selfie point at the campus entrance enables visitors to capture the experience of visiting the heritage site.
- ✿ Automatic Mechanical Composter for organic waste processing, one E-vehicle, ten SMART bins & 40 steel bins for waste collection brought in tech-evolution in waste management in the campus.

SUSTAINABLE DEVELOPMENT GOALS



SOLAR STREET LIGHTS FOR RURAL COMMUNITIES

Ovale Panchayat, Pune District, Maharashtra
Project Period: March 2021



The street lights in Ovale panchayat gave a sense of relief for the villagers, especially women, giving them the confidence to move around the village even at night, and early in the morning, as the street lights provide ample light. Placed in public places and important locations, the lights were driven by solar energy, creating renewable energy driven lighting system in the village. 45 such solar lights were installed in the village to improve the living conditions of the Ovale residents. This intervention falls in line with the Atal Jyoti Yojana (AJAY) under the Off- Grid and Decentralised Solar Application Scheme of Ministry of New and Renewable Energy (MNRE), to promote solar LED lights in areas with inadequate energy source.

SUSTAINABLE DEVELOPMENT GOALS



SOLAR LIGHTS AND AVENUE TREES

Oragadam, near Chennai, Tamil Nadu
Project Period: 2020 – 2025



Saplings of different plant species were planted across regions under the drive as a part of ecosystem restoration. Plantations were a mix of agroforestry and horticulture methods to create a symbiotic micro-ecosystem. One unique activity under the drive was planting 60,000 avenue tree saplings in Oragadam, Tamil Nadu, along the State Highway (SH-58) stretching to 12.5 km, supported with 160 solar lamps.

Through this initiative, Hand in Hand India has planted 2,902,412 saplings across the country.





GREEN SCHOOL

Akhod Primary School, Bharuch District, Gujarat

Project Period: November 2018–March 2021



In consonance with the aim of Sarva Shiksha Abhiyan (SSA), Hand in Hand India turned the Akhod Primary School in Gujarat into a Green School, by setting up eco-friendly infrastructure and implementing eco-friendly activities.

- ✿ 100 percent self-sufficient in energy requirements with a 7.5 kWh solar power backup.
- ✿ A see-saw pump with a dual role of enthralling children and extracting groundwater.
- ✿ Green play area, a tree canopy and vegetation.
- ✿ Kitchen garden and herbal garden maintained by the school children and teachers.
- ✿ Proper waste management.
- ✿ Awareness creation activities on environmental conservation for children.
- ✿ Obtained Green School certificate for practicing eco-friendly measures in the campus.

MOVING TOWARDS RENEWABLE ENERGY

Tamil Nadu, Maharashtra, Gujarat



We are gradually integrating renewable energy in our interventions viz.

- ✿ Green VUP (Village Uplift Programme) with emphasis on environmental conservation in development activities – 17 Green VUPs; 7 in Tamil Nadu, 9 in Maharashtra and 1 in Gujarat.
- ✿ Setting up solar energy driven pumps for bore wells, conforming to the PM-KUSUM Scheme to support irrigation system in off-grid areas – 2 solar operated pumps in Pattikaadu & Hanumanthapuram, Tamil Nadu.
- ✿ Setting up of solar-powered lights along streets and ponds to enlighten village communities 31 street lights & 1 high mast lamp.







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