



CIRHEP- ANNUAL REPORT 2020-2021



Chandra who have well experience and expertise in development alternatives. The organization is governed by a General Body and Executive Committee and Office bearers from various fields with clearly defined roles and functions. The organization is also having a team of well experienced and committed staff members who have technical expertise in the field of Watershed Development, Natural Resource Management and Sustainable Agriculture Alternatives with profound knowledge and understanding on socio, economic, and cultural issues of rural sector.

About CIRHEP

CIRHEP (Centre for Improved Rural Health and Environmental Protection) is a legally registered, non-governmental, voluntary organization engaged in promotion of sustainable rural development and natural resource management in the dry land areas Dindigul, Madurai and Theni Districts of Tamil Nadu. It also works for the improvement of the health and nutrition of rural people and protecting the rural landscape and environment through promotion of watershed development and sustainable agriculture approaches. It also supports the rural community by providing environmental education children, nutritional, establishing replicable models on ground, empowering women by promoting entrepreneurial collective actions. Founded in 1994 by Mr. P.M. Mohan and Ms. K.A.

Over the years, CIRHEP had implemented many collaborative projects both with the support both State as well as Donors from abroad and successfully implemented various programs with significant outcomes and impacts on people's livelihood and empowerment. CIRHEP works with farmers promoting organic agriculture and bio-dynamic inputs in their watershed areas, promoting a sense of responsibility through environmental education, working for women empowerment, working with adolescent girls and children as part of an integrated community development approach with an intention to reduce poverty, improve livelihood and access to enough quality food for the rural to lead active and healthy lives.

CIRHEP is always believe in local takeover of its project initiatives after the project completion and as a result many of its previous projects, especially watershed programs are now being governed by respective local communities in the target villages. CIRHEP is still do a facilitation role with its local committee members by constantly reviewing and supporting them in areas they need back up support. All the project interventions and activities have been planned based on the vision and mission of CIRHEP which are envisaged by its founders with periodical review and analysis of its board members. Having its vision and mission as guiding principle, the projects have been planned in a participatory approach with intensive and interactive consultation and process with target communities. In short, we are building communities before building projects.

Vision

Building the Capacities of the Rural Communities in conserving the Vaigai – Kaveri river watersheds in Dindigul, Theni and Madurai Districts of Tamil Nadu and making the area sustainable for better livelihood.

Mission

To create a sustainable human – ecology relationship and improve the quality of rural life by striving to alleviate poverty, provide education and conserve the environment with active participation of the rural community.

Approach

The unique Community Driven Participatory Development approach of CIRHEP places communities at the heart of all development activities. We help them build upon their assets, enhance their capacities, and ensure their active participation in all stages of development.

Hundreds of thousands of non-literate rural folk, especially women, have transformed themselves into effective agents of change and emerged as strong community leaders, innovators, seed savers, resilient farmers as a result of relentless capacity building processes.

Geographical area of operation



CIRHEP’s geographical area of operation has been spread over in 3 Taluks in Dindigul District, Tamil Nadu, South India. Around 32 villages in Nilakottai Taluk in Kadavakurichi Reserve Forest, 15 villages around Oddanchatram taluk and 7 villages around in Vedasandur taluk.

Beneficiaries and stakeholders

The target beneficiaries of CIRHEP are predominantly resource poor, small and marginal landholding farmers, women, youth, students and their associate groups like farmers groups, women groups, youth clubs, seed producers, farmers producer organizations, network of seed producers. CIRHEP also have a list of stakeholders ranging from various line department, Panchayat leaders, consumer network, policy makers and also elected people’s representatives like MLAs and MPs within its constituency.

Key projects implemented during the year 2020-2021

Name of the Project: Strengthening climate resilient agriculture practices through greater agro biodiversity cropping system for ensuring food and nutritional security



Support Agency: Future Earth, Sweden

Project Objective:

Strengthening capacities of communities in addressing food and nutritional security issues through adaptation of climate resilient agriculture practices.

Key Activities:

- Strengthening of existing organic farmers in crop/ production and vegetable production through kitchen gardens.
- Strengthening of bio input & bio pesticides production units in 10 farmers fields
- Creating marketing linkages for organic produces.
- Survey on millet cultivation, consumption of millet food etc.
- Strengthening and management of seed bank
- Support to seed savers and seed producers
- Facilitating stakeholders' consultation processes for bringing appropriate policies.
- Organize traditional food mela for women group members focusing health and nutrition issues.
- Awareness program on climate change for college students



Bean, Green Gram) and vegetables (Bottle Gourd, Ridge Gourd, Okra).

- Application of organic inputs resulted in the enhancement of soil health and microbial population. This has been recorded in 70 farmers fields through soil test and analysis.
- Around 50 organic farmers in 10 villages has become trend setters in marketing their organic products directly to consumers. This has led to the elimination of middleman and helped both consumers and producers gained fair price.

Project Achievements:

- 250 farmers have established a backyard kitchen garden of 2 cents each and started to consume a quantity of 4 Kgs of poison free vegetables per week. This has saved their money of Rs. 300 which they normally used to purchase from market.
- 100 farmers have planted 2000 native tree seedling @ 20 per farmer on the field. The children of farmers took the responsibility of maintaining the seedlings planted. This has empowered the children on knowledge and utility of the various trees.
- 80 women farmers have emerged as seed mothers and each of them are involved in seed savings 10 different indigenous varieties of millets,(Maize, Sorghum, Pearl Millet, Foxtail Millet) pulses (Cowpea, Country
- Quality traditional seeds of millets and pulses for 8 species is available with 80 farmers.
- Convergence with govt. governments schemes has been achieved both in crop cultivation and animal husbandry. About 20 farmers got free vegetable seedlings (tomato and chilli) from Agriculture department. About 7 farmers have received Rs. 84000 each as state relief fund. 1 Farmer availed support of Rs. 30000 for the construction of cattle shed. Around 50 farmers received Payapa fruit bearing seedlings. 30 farmers availed a package of vegetable seeds with vermi-compost for their backyard kitchen garden. 1 farmers availed 2 acres of wasteland for crop cultivation. 30 farmers got small farmers certificate from horticulture department which helped them to become eligible for availing government subsidy schemes for horticulture crops.

Outcome of the Project:

The project activities implemented in the field has brought the following significant outcome.



Kitchen garden



Oil seed field



Millet field



Millet seed showing

- The farmers by and large started to practice summer ploughing on their field before the crop cultivation. They now realized its multiple benefits on how it helps in exposing the eggs of pests, increased aeration and water holding capacity of the soil.
- Similarly, the shift to cultivating millets and pulses has increased the drought resilience capacity of the farm, besides its contribution to food and nutritional security. Knowing the benefits of low water utilizing, the farmers went into few technological interventions like sprinkler and drip irrigation as the State also encouraged the farmers through special subsidy arrangement. These interventions have been significantly supported the farmers
- to extend the cultivation area of millets and pulses and also increased the diversity of crops in a mixed cropping system with 2-3 different millet varieties and 3-4 pulses varieties and also oil seeds crop like castor on the borders.
- In response to our emphasis during the trainings and follow up visits, the farmers have significantly changed their food consumption patterns. Millets have been an integral part of their daily diet, especially the children and women and that too with new kind of recipe, thus enhanced their knowledge in preparation of millet-based food items.
- These knowledge gained by women farmers earned the respect and recognition, more importantly on their decision-making

capacities (on what to cultivate, how to cultivate and what kind of food to be cooked) both at the family level and community level. In each of the target village, there are 2 women leaders have emerged as leaders and showing the way to their fellow farmers.

- Generating income from other sources is also a climate resilient approach. Realizing this truth, the women farmers have strengthened their collective action in animal husbandry by availing a loan of Rs. 1,20,000 from Co-operative society bank and bought milch animal benefiting 12 women.
- The integration of milch animals along with their agriculture activities, they gained additional farm income through milk and using

the cow dung and cow urine for the preparation of different kinds of bio inputs needs for the crops. At an average, they gained a sustained and additional income of Rs. 5000 per month.

- This apart from their own family consumption. The women are also started to think on how the income could be further enhanced through value addition of dairy products. The income enhanced from farm are invested in children's higher education. Around 10 girls and 7 boys are going to university education. CIRHEP is trying to all possible hand-holding support for this in the coming years.

CIRHEP has been a member of Future Earth Asia Network. Under Future Earth CIRHEP is getting 2 project support. One is the longer project has been implemented throughout the year and the other one is smaller project has been implemented within a period of 4-5 months. It is also called as common activity project in which all the network members will identify a theme for common activity and all will implement the activity. During the year 2020, CIRHEP implemented the following common activity.

Project title:

Sensitizing and promoting college youth and school children of rural areas as agency for preserving agro ecology and ensuring food sovereignty.

Support Agency: Future Earth, Sweden



Activities implemented:

- Orientation training for Rural Youth & college students on Climate change and Organic farming
- Orientation training to school children (7th, 8th and 9th) Climate change and Kitchen garden
- Review & planning process- Mapping of village resource village needs and social map
- Follow up activities for Rural youth (Seedling raising)
- Follow up activities for school children (kitchen garden & seed packing)
- Eco Green volunteers and agro ecological model farm visit
- Prize and Eco Green volunteers certificate - Best Student
- Prize and Best Agro ecological model certificate – Best farm
- Printing and publication of Agro Ecological hand book

Outcome:

- It is encouraging to note that the farmers and students have sown the seeds of vegetables and the planted the tree seedlings, maintaining them with enthusiasm.
- Around 150 students have been trained in ecological agriculture principles and practices and thereby enhanced their knowledge on food security
- Around 750 farmers and students have planted tree seedlings and seeds of

vegetables. The involvement and participation resource persons from Horticulture and Agriculture and Animal Husbandry are very encouraging and they have extended their support for future intervention of CIRHEP in promoting agro ecology.

- Many farmers have applied for subsidy for farm implements and seeds of pulses from the State. Overall, the students have utilized the time during the lockdown period and utilized it in a productive work conserving the ecology and environment, better understanding about the relationship of conserving natural resources and the prospects of agriculture.
- Apart from knowing the methods of cultivating pesticide free fresh vegetable production, they have transformed their learnings and knowledge to their parents and being a model youth in their respective villages. They also understand the benefits of tree cover and its multiple benefits apart from providing oxygen for human.
- The seedlings that are planted are done with circular bunding and mulching for water conservation and support stick to save them from heavy wind.
- Through this intervention, the farm families have achieved the production of greens in the first week after the cultivation which helps the nutritional supplement of their families. About 15% of the target farmers have also shared their produced greens and vegetables to their neighbours who are in a

very vulnerable situation. This shows the solidarity support within the community. 60% of the farm families have harvested vegetables and greens worth of Rs. 50 per week from September to December 2020 and 25% of the farm families have harvested vegetables and greens worth of Rs. 30 per week on the same period.

- Though, drought had played a major role in challenging the requirement of water, the farm families have used their household waste water efficiently to get a reasonable yield. If they had a good and timely rain, the yield and benefits will be doubled. The farm family's intake of vegetable and greens has increased significantly around 60% and 50% of the families have increased the area of herbal cultivation on their backyard.

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- The availability of herbs at their reach and its medicinal uses has increased the intake of herbal as raw as well as making it as immunity boosting decoctions and consume them to fight against Covid-19. They have also shared with their neighbours and encouraged them to cultivate these herbs at their backyard and make their own immunity boosting decoctions.
- The school children and college students has emerged as Eco-Volunteers through their engagement in this project to play the role of local human resources to sustain the initiatives taken beyond the project period. They have proved their capacities and emerged as potential human resources in the target panchayats.

Project Name: Climate Change Adaptation Project

Support Agency: Adaptation Fund Board, USA

Implementing Agency: NABARD

Project Implemented by: CIRHEP jointly with Village Watershed Committee of Sriramappuram Malvarpatt

Introduction:

This is a 5 year project started in April 2016 and ends in July 2021. Hence, this reporting year is the last year of this project. CIRHEP has been engaged in watershed programs for more than a decade and as of now it has completed 10 watershed project, mainly with the support of NABARD and few other agencies like TAWDEVA and some CSR support like Amway. Over the years, our experience tells that watershed development has proved that it enhance the water tables in the project area and also increase agriculture outputs. It has also brought about many changes within families and the village – politically, socially, and culturally. Watershed management is an adaptive, comprehensive, integrated multi-resource management planning process that seeks to balance healthy ecological, economical and cultural / social conditions, within a watershed. It serves to integrate the planning of land , water and community participation. It has been established that watershed management has (i) recharged ground water table (ii) restored soil fertility and helps in soil conservation (iii) restores water for drinking and other human purpose (iv) helps light climate change and promote sustainable agriculture (v) protected biodiversity of a the project area.

Key activities implemented during this year:

- Summer plough
- Digging of Well recharge pit
- Fodder Development
- Integrated Farming System
- Promotion of Kitchen Garden
- Drip Irrigation & Micro Sprinkler
- Gio Hydrological Study
- RML Subscription
- Exposure Visits and Peer learning
- Education kit - Manual on Climate Change adaptation

Impact of the program:

The execution of above activities have created a wide range of impact both on the livelihood options of the rural community as well as the regeneration of productive resources and other natural resources. Improved soil and water regime for better crop productivity which resulted in the increase of farm income. Similarly, it also increased the adaption to climate change through climate resilient farming systems approach and diversification of livelihoods. Overall, it reduced the vulnerability situation and improved the potential of risk mitigation measures largely adopted by the farming community. Under this project, the outcomes have been measured against the 4 set outcomes at the beginning of the project.

Outcome 1:

Improved soil and water regime for better crop productivity and resultant increase in income of farmers.



This has been observed in 3 areas like increased adaptation of summer ploughing, deep tillage and excavation of well recharge pits by farmers.

A total area of 397 Hectares have been covered under summer ploughing. This practice has increased the water content of the soil and also it reduced the soil erosion. The farmers practice it were benefited with pest control and it also reduced the weeds on farm lands.

Similarly, the practice of deep tillage are achieved in 115 hectares of land. Deep ploughing turns out



large sized clods, which are baked by the hot sun when it is done in summer. These clods crumble due to alternate heating and cooling and due to occasional summer showers. This process of gradual disintegration of clods improves soil structure and including quick rain water infiltration. The rhizomes and tubers of perennial weeds (world's problematic weeds viz., *Cynodon dactylon* and *Cyperus rotundus*) die due to exposure to hot sun.

Thirdly, a total of 104 well recharge pits were dugged. Well Recharge pits are made near the wells to divert the surface runoff water that the mineral

rich top soil into the open well through filter pipes and conserve the water resource by raising the ground water level. The purpose of well recharge pit is to ensure that rainwater percolates into the soil. A recharge pit allows the rainwater to

Outcome 2: Increased adaptation to climate change through climate resilient farming systems approach and diversification of livelihoods.



Around 105 fodder development units were established and this has increased the availability of key fodder grasses like Co4, CoFS 29, Subabool and Sesbania. Fodder availability increased among those who have raised these crops and as a result of this, the number of livestock units has increased in the project area. This has led to increase in assets among farmers and a sustained source for income for farmers. Due to increased number of livestock units, the potential for availability of organic manures has also increased. Availability of fodder throughout the year has led to reduction of distress sale of cattle due to non-availability of fodder especially during the dry season. Earlier farmers used to cultivate annual crops of red sorghum and after threshing out the grains, the chaff was provided to cattle within the farm. Farmers had to sow these single cut fodder species every year. Now with multi-cut fodder including Co4 Super Napier, CoFS 29, farmers are able to meet their fodder requirements throughout the year.

Increased availability of diverse vegetables at household level has been made possible through support from this project. Due to kitchen garden activity, there has been an increased production and

replenish the groundwater by recharging the underground aquifers. Because of recharge pits, the water table in the wells have increased than its level prior to construction of well recharge pits.

consumption of vegetables within the household. On an average there has been a 20-25% increase in availability of vegetables grown within the household. This has led to corresponding decrease in purchase of vegetables from the market. This has also contributed to reduction in expenditure within the household. On the other hand, it has also helped in contributing to increase in nutrition security of the households in the project area.

Increased productivity due to high quality organic manure (vermicompost, compost, bio gas slurry and tank silt application) was noticed among farmers who have been benefited from undertaking this activity. Farmers who have applied vermicompost, compost and tank silt application has benefited the farmers through increased yield and this was possible mainly because of the improvement in soil physical and chemical properties. This in turn has led to increased water infiltration and moisture retention in the soil. Application of tank silt has significantly improved the soil properties and has led to increased yield among a number of crops.

Increased efficiency in irrigation / increase in area of irrigation and subsequent increase in production was noticed wherever sprinkler, micro-sprinkler and drip irrigation has been introduced. Farmers who were earlier using flood irrigation for their fields were able to irrigate their fields only for 2 hours. Introduction of sprinkler, micro-sprinkler and drip irrigation has led to increase in the number of irrigation hours without reduction in yield. On an average farmers are now able to irrigate for 5- 6 hours due to increased efficiency in irrigation through sprinklers, micro-sprinklers and drip irrigation.

Shifting from mono crop to mixed cropping (millets+pulses+cotton) has happened in many of

the farmer beneficiaries of the project. Multiple / mixed crops has reduced the risk of crop failure which was the norm during monocropping days. Mixed cropping of millets+pulses has enhanced the availability of millets and pulses thereby increase in protein availability for the farming family. Some farmers had also introduced mixed cropping within cotton and that too cotton raised with indigenous seeds (karunganni) cotton.

Outcome No. 3 – Reduced climate change vulnerability with improved risk mitigation measures



To achieve this outcome, providing advisory services to crop cultivation was done on the project. As a result, climate vulnerability has been reduced and they are reflected on the followings. Crop advisory services were provided to farmers in addition they were also provided with (i) daily market prices, update for two crops, and markets for each crop, highest and lowest prices and arrival of crops (ii) Crop advisory / best practices for major crops in the area which included relevant timing for sowing and other crop management practices (iii) weather forecasts on temperature, rainfall probability and relative humidity (iv) agriculture and rural news. Support to the extent of Rs. 150000 was provided as subscription to RML to ensure that agro-advisory services are provided to farmers in their own mobile phones in vernacular (tamil) language both through SMS as well as voice messages. On a cluster basis and dissemination of crop weather advisory to farmers linked with

Increased adoption of herbal plants at household level has happened due to awareness created from introduction of herbal gardens through this project. Almost every household which was a beneficiary to this project has at least 3 – 4 herbal plants within their kitchen garden. These herbal plants were useful in preparing herbal decoctions and other forms which they used for regular health aspects. This has contributed to reduction in purchase of off the counter medicines.

IFFCO Kisan Sanchar Ltd. Around 90 farmers have been benefited from this. Voice message and text message services were provided for agriculture and agri allied activities. 2 Voice Message & One Text Message per day. First Voice Message service was based on agriculture activities of the project and the second Voice Message was based based on agri allied activities (Animal Husbandry , Health, Sanitation, Women development, Livelihood education, Government sponsored scheme etc).

Outcome No. 4 – Knowledge Management





This outcome envisaged a strong knowledge management system established which enabled documentation and dissemination of knowledge and lessons learned from the project to different stakeholders including policy makers and planners. Based on the project's learning, dissemination materials, audio visual materials were developed for knowledge dissemination. Certain specific activities were designed to achieve the outcomes which are as follows:

Posters and Pamphlets, Educational Kit

manual climate change Adaptation

Name of the project: Climate Proof Project

Support Agency: NABARD

Project implemented by: CIRHEP jointly with Village Watershed Committees of Kadavakurichi, Musuvanuthu, Mallanampatti, Kombaipatty and Sivaganapuram Watersheds.

These are instruments by which mass awareness is created. These posters and pamphlets are also low cost items. Pamphlets of vermicomposting, rainfed indigenous cotton, Covid – 19 safety and precautions, fodder management for milch animals, cattle insurance scheme, goat rearing, bio-gas plant construction and usage, micro-irrigation systems, package of practices on cotton and pulses, preparation of plant growth promoters and dryland farming practices. Among posters, vaccination table for milch animals, vaccination for goat and sheep, Integrated farming system, climate change adaptation measures, agro-advisory services, comparison of micro irrigation and flood irrigation, Preparation of concentrated feed, Bio gas construction process, Watershed – issues, solutions and interventions, beneficial insects, 7 tips for doubling farmer incomes and watershed maps.



Introduction:

On the basis of PRA and the suggestions on adaptation methods and strategies were developed by Department of Agro-Climate Research Centre



of Tamil Nadu Agricultural University, Coimbatore for incorporation in the net plan such as Soil and

Water conservation methods, measures to increase water use efficiency, ways to increase the farm income and minimise risk in crop production. It was also suggested that to provide mobile linked ICT, value addition and marketing of agricultural produces will go a long way in better adaptation and resilience of targeted communities to changes in climatic and non-climate variability.

Key Activities implemented:

A package of various activities have been implemented in this project which includes soil and water conservation, agronomical activities, capacity building on bio input preparation, redesigning of farm with crop diversification and also providing advisory services. They are:

Digging of sunken pond, planting of fodder trees for gully stabilisation, adding fruit trees in the backyard, broadening field bunds and planting with pulses, agro horticulture, excavation Well Recharge Pit (WRP), Soil testing and issuing soil health card, Summer ploughing, Deep Tillage, Green manure cultivation , Vermi Compost , Tank silt application, Bio fertilizer, Bio control agents, Egg cards , Pheromone traps , Azolla demo unit , Honey bee keeping , Alternate varieties – demo, Alternate crops – demo, Intercropping, Crop rotation, Seed treatment, Kitchen Garden/Nutritional garden, Poultry unit, Agriculture tool bank for SHG, Weather based Agro Advisory Services, Crop insurance, Farmers trainings, Exposure visit , Posters and Pamphlet on climate change Adaptation, Audio visual tools - short films, Staff training and Watershed level knowledge management are implemented.

Outcome:

- Significant improvements have been seen in the soil and water conservation aspects in the watershed resulting in better capture of rainfall, ground water recharge and increased water availability for drinking and irrigation and improved soil fertility contributing to increased crop production. The net sown area has increased in the watershed and there is more availability of fodder for livestock.
- Communities have received gainful employment under the project especially during the lean months of the year. Apart from providing employment and income, provided multiple environmental services such as increased ground water recharge, water percolation, enhanced water storage in tanks, increased soil fertility, soil moisture, crop yield, fodder availability and overall income of the family, decreased ambient temperature, reclamation of degraded lands and Carbon sequestration.
- The activities have the potential to provide guaranteed benefits such as desalting of water bodies accompanied by silt removal and application to crop fields, land development leading to land leveling and cropping, fodder trees for gully stabilization (as a drought proofing activity) with appropriate species choice and construction of Sunken pond.
- Women SHG members are more active and have accessed institutional finance for undertaking income generation activities and entrepreneurship development.
- Agricultural production and biomass have increased with enhanced incomes and savings

from purchase of fertilizers & pesticides, fodder etc. Social cohesion aspects have improved including the gender relations between women and men, girls and boys.

- Women are now more vocal and participate in meetings and are involved in the decision making processes at households and community level. Women discuss specific issues of improved water, sanitation and personal hygiene and other social issues impacting their lives and livelihoods. Women now collectively help other women and families in distress.
- Distress sale of cattle has reduced in the village due to availability of increased biomass and access to institutional finance. Targeting aspects have been consciously addressed for inclusion of the poor and most vulnerable individuals and families under the project and supporting them with specific project activities based on their specific requirements and

vulnerabilities. Such individuals and households have also been linked and availing financial support from nationalized banks.

- The positive impacts of the watershed treatment and community mobilization activities will be realized during the next cropping season and in the coming years. As a result the social, economical and livelihood situations such as increase the household income, women empowerment, changes tiled houses into concrete houses, owning two wheelers, fridges, washing machines etc, are some of the improvements obtained from the increased income by accessing water for drinking and agricultural activities, fodder and fuel. It also reduced the drudgery of the women in the watershed area and made them to concentrate with some other income generating activities.

Acknowledgement:

On behalf of the Board, CIRHEP wishes to acknowledge all its donors for their continued support in implementing the project at our target villages. We thank Future Earth International Network, CIRHEP Friends' Ground in Sweden for its support and contribution for implementing the project on strengthening climate resilient approaches through greater agro biodiversity initiatives. NABARD has been instrumental for CIRHEP to become a resource agency in watershed programs and also extending our watershed development projects to other needy areas through Adaptaton Fund Board, USA. We also thank the resource people from NABARD and line departments namely, agriculture department, horticulture department, veterinary department, gandhigram rural insitute for providing their expertise in designing, planning, implementing and also capacity building processes. Without these collective support, CIRHEP would not achieved the significant outcome of the projects. We also thank the local village watershed committee, local farmers groups, women groups and youth clubs for their immense support and contribution for the successful implementation of various projects during this year. We expect the same kind of support and cooperation from them in the coming years too.

