

Gamata Light

Energy Services for Villages



Sri Lanka Energy Services Delivery Project
Credit Programme

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Sri Lanka, Energy Services Delivery Project

Credit Programme

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Sri Lanka, Energy Services Delivery Project

Credit Programme

Background

At the request of the Government of Sri Lanka (GOSL), the World Bank and the Global Environment Facility (GEF) agreed to provide funding assistance for an Energy Services Delivery Project in March 1997.

The project comprises three components:

- ESD Credit Programme
- Pilot Wind Farm
- Capacity building to support the Ceylon Electricity Board's Pre-Electrification Unit and its Demand Side Management Unit

The International Development Association (IDA) of the World Bank Group and the GEF approved a US\$ 24.2 million IDA credit and a US\$ 5.9 million GEF grant. The allocation for the three project components include (i) US\$ 49.0 million for the ESD Credit Programme, (ii) approximately US\$ 3.8 million for the pilot wind farm and (iii) approximately US\$ 2.6 million for Capacity Building.

The executing agency for the ESD Credit Programme is the Ministry of Finance and Planning. The GOSL selected the DFCC Bank to set up an Administrative Unit within it to manage the Credit Programme, and to administer the GEF grants to support off-grid subproject preparation activities, co-finance off-grid subprojects and provide off-grid project support through promotional activities, technical verification of solar home systems and village hydros, and consumer education and protection.

The Pilot Wind Farm and Capacity Building components come under the purview of the Ceylon Electricity Board (CEB).

This publication focuses on the ESD Credit Programme.



Objectives

The long term objectives of the ESD Credit Programme are to :

- Incorporate environmentally sustainable renewable energy objectives within the policy framework for grid connected power generation (wind and mini hydros) and pre-grid rural electrification (solar home systems and village hydros)
- Achieve acceptance by consumers, project developers and financial institutions of the viability of grid and off-grid renewable energy systems for electricity generation and delivery

These translate into the following Project targets.

- Capacity addition of about 21 MW to the CEB grid through mini hydro projects
- Electrification of about 20 villages serving a total of approximately 2000 households through village hydro schemes
- Installation of about 15000 solar home systems (SHS) in rural households unlikely to be served by the grid medium to long-term
- Development of sustainable markets for grid and off-grid renewable energy technologies
- Mitigation of greenhouse gas emissions through displacement of conventional technologies by hydro and solar photovoltaic

Introduction

The largest component of the ESD Project is the Credit Programme, which provides medium and long-term financing to private project developers, non-governmental organizations and cooperatives for off-grid electrification such as solar home systems (photovoltaic) and village hydro schemes, grid-connected mini hydro plants, and other renewable energy investments. US\$ 5.0 million under this component has been allocated for electrification through solar home systems (SHS) and village hydro schemes.

Funds are disbursed through participating credit institutions (PCIs). At present DFCC Bank, National Development Bank, Hatton National Bank, Sampath Bank, Commercial Bank and

SEEDS (Sarvodaya Economic Enterprises Development Services) participate in this credit programme.

Grant co-financing from the GEF is available for off-grid subproject developers. In addition technical assistance grants are also available through GEF for preparation of off-grid subprojects namely, for consultants to prepare feasibility studies, business plans and bank loan documentation as well as for solar home system and village hydro technical verifications.

To offset the relatively high cost of supervising small off-grid projects in remote villages GEF grants are available to PCIs to supervise solar and village hydro electrification projects.

A promotional programme is also being implemented to create general awareness among potential customers regarding village hydro and solar home systems. The Sri Lanka Business Development Centre (SLBDC) has been appointed to provide consulting services for the promotional programme.

An effective consumer protection facility is established and maintained to investigate unresolved consumer complaints against SHS dealers and seek appropriate resolution.

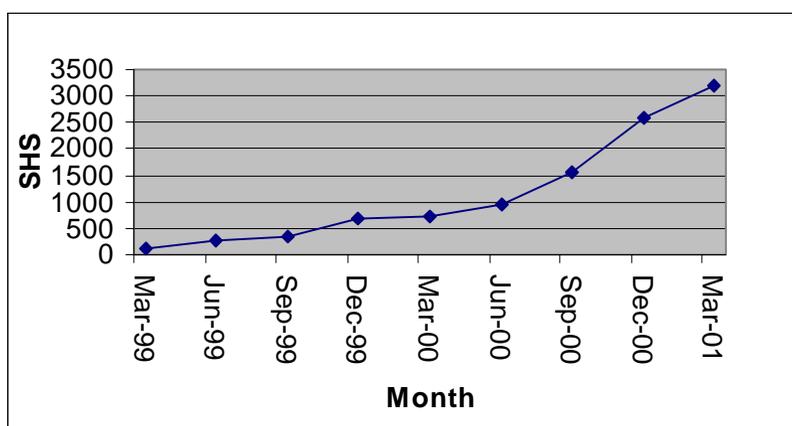
Off-grid Electrification - Solar Home Systems

A steady and encouraging growth has been observed in the solar industry, since around July 2000. At present SHS dealers/developers marketing ESD compliant systems are:

- Access Solar
- Alpha Thermal Systems (Pvt) Ltd
- SELCO Solar Lanka Ltd
- Shell Renewables Lanka Ltd

As at March 31, 2001 the cumulative number of households using photovoltaic electrification under the ESD Project was over 3200. By March 1999 only 122 households purchased SHSs under the ESD Project. By March 2000 the cumulative number increased to 711 and a year later it stood at 3206.

Growth of SHS Sales (Cumulative Total)



The district/provincial breakdown is given below.

**Number of Households with SHSs under the ESD Project –
Geographical Distribution (as at March 31, 2001)**

District	Province	Total
Ampara	North Eastern	108
Anuradhapura	North Central	250
Badulla	Uva	186
Batticaloa	North Eastern	16
Colombo	Western	12
Galle	Southern	137
Gampaha	Western	11
Hambantota	Southern	100
Kalutara	Western	3
Kandy	Central	39
Kegalle	Sabaragamuwa	34
Kurunegala	North Western	453
Mannar	North Eastern	9
Matale	Central	199
Matara	Southern	174
Moneragala	Uva	501
Mullaitivu	North Eastern	1
Nuwara Eliya	Central	120
Polonnaruwa	North Central	146
Puttalam	North Western	68
Ratnapura	Sabaragamuwa	594
Trincomalee	North Eastern	36
Vavuniya	North Eastern	9
Total		3206

Please refer map of Sri Lanka given in Annex 1.

SEEDS as a PCI

The growth in the solar photovoltaic industry is largely due to the micro finance institution, SEEDS, providing consumer financing to householders to purchase SHSs. SEEDS becoming a mainstream PCI very recently is an encouraging factor for the industry. In addition the entry of new developers who are expanding their rural network, have also resulted in improved access.

Government Agencies Initiatives in Promoting SHSs through ESD Project

Another striking feature is Government agencies supporting the use of SHSs, for instance, the rural electrification initiative of the Uva Provincial Council (UPC). UPC has accepted that grid connected electrification of the Province is very costly, and will take a number of years to complete. UPC has therefore launched a programme, which promotes the use of SHS and a grant scheme of Rs 10,000 per household has been initiated. The Council is working very closely with the private sector (developers/bankers/financial institutions) and is using the demand driven and transparent subsidy delivery mechanisms in place in the ESD Project. The target set by the UPC for 2001 is the installation of 3000 SHSs and in 2002 the estimated target is 5000 SHSs.

In addition the Ministry of Estate Infrastructure and Livestock Development is interested in implementing a similar project for the plantation community where initially about 500 SHSs will be installed.

Solar Industries Association

The ESD Project supported the formation of the Solar Industries Association (SIA). The SIA is a non-profit organization, which represents the interests and views of the solar photovoltaic industry. The Association seeks to serve as a catalyst between its members, the GOSL, the World Bank and the ESD Project. Its activities include creating new ideas to develop the solar industry, coordinating ongoing training and accreditation of personnel to support the industry, coordinating the enforcement of equipment standards and conducting market research.

Active dealers marketing ESD compliant systems and a leading micro finance institution in Sri Lanka, which is also a PCI under the ESD Project, are members of this Association.

SIA works closely with the Sri Lanka Business Development Centre to promote solar energy at grass root level under the ongoing promotional programme of the ESD Project.

Beneficiaries Viewpoints

With over 3200 SHSs having been installed in 23 districts in Sri Lanka under the ESD Project, discussions were held with a number of beneficiaries who benefited through this process. Their cameos are illustrated overleaf.

Night Shift is Easier with Lights...

Mr. S P Wimalasena (Bakery Owner-Indigolla Polpithigama, Kurunegala District)



There are four in my family. Since 1994, we have been running a family owned bakery. Earlier we had a problem working at night, baking bread using kerosene lamps for illumination. On one hand it's very dangerous and on the other it's quite expensive to use kerosene oil. Therefore we purchased a SHS from Alpha Thermal, which is worth Rs. 36000/- (six bulbs, TV [B/W], radio) under the easy payment scheme operated by a micro finance institution (MFI). Initially we made a down payment of Rs 9000/- and thereafter we have to pay Rs 545/- monthly over a period of six years. This solar panel is a very economical way of getting electricity and the supplier has given a 10-year warranty on the panel. Our quality of life has improved markedly, now we are much happier

because we have solar powered electricity.

We are delighted...

Mrs. A M Muthumenika (Widow -Dekanduwala Polpithigama, Kurunegala District)

There are three in my family. Over the past five months, we have been getting electricity from the sun. My late husband was a teacher in our village school. Now we are living on his pension. If we could have got electricity from the main grid we would have been very fortunate, but we have to be satisfied with the SHS, as the only other option is kerosene lamps, which is a headache for us. We bought a SHS from Alpha Thermal, costing Rs. 46,000/- utilizing a MFI credit scheme. Initially, we paid Rs 8,300/- and now we pay Rs 775/- monthly for a period of five years. (six bulbs, TV [B/W], radio). So far we have not encountered any problems in using this and the light is quite good. My son who is studying for a law exam had a problem reading under kerosene lamps but now he can give more attention to his studies. This is a very economical way of getting electricity. The dealer has promised more lights if we have a family function, provided we inform them in advance. This has totally changed our lives.



I was Elated...

Mr D L I Liyanage (Businessman -Dambaara Madahapola, Kurunegala)

One fine morning two people came to our house and gave a set of brochures but I did not pay any attention. The same evening my son convinced me to explore the possibility of



purchasing a SHS. The next day I contacted Shell Renewables and obtained further information about solar panels. Then I discussed with my wife, and decided to buy one for Rs 36,000/- (four Bulbs, TV [B/W], radio) through a MFI credit scheme. Later I realized it is very important to have another one for my shop. For the second one I paid Rs 6,500/- as a down payment and thereafter every month I have to pay Rs 400/-.

Earlier I opened my shop from 7.30 a.m. to 6.30 p. m. but now I am open from 7.30 a.m. to 10.30 p. m.

It Makes More Time...

Mr. D S Manathunga (Farmer and Cement Block-maker - Uvatissapura, Mapakada, Mahiyanganaya, Badulla District)

There are four members in my family -wife, daughter, son and myself. Since 1998 we have been running a small cement block making enterprise. During the day I work in my paddy fields and in my leisure time I am engaged in cement block making. Before purchasing the panel I could not make blocks at nighttime. We purchased the SHS from Shell Renewables, which is worth Rs 42,000/- (Six bulbs, TV- [B/W] and radio) through a MFI operated credit scheme. First we paid Rs. 9,000/- as a down payment, thereafter every month we have to pay Rs. 940/- and after repaying this loan we can get electricity without paying a cent. This is very convenient for my children to do their homework and now I feel that they are doing well in their studies.

Broken Promises...

Mr H.M.Pemarathna – (Farmer - Uvatissapura, Mahiyangana, Badulla District)

There are four members in my family – wife, son, daughter and myself. The children are schooling. For a long time every political party promised us electricity during election time. But once elected these promises were never kept. Therefore we thought of purchasing a SHS to get electricity for our home. We purchased this panel from Shell Renewables for Rs.28,000/- with assistance from a MFI (four bulbs, TV – B/W and radio). Compared to grid- connected electricity, this is not very satisfactory. We can't use household appliances like an iron, fan etc. Since we do not have an opportunity of getting grid power this is a

cheap way to get electricity. But the problem is, if there are two or three rainy days then the battery does not charge well and it is very difficult to switch on all lamps for a few hours.

Can Deliver Orders on Time...

Mr H.M.Gunarathna (Retailer - Uvatissapura, Mahiyangana, Badulla District)



There are four members in my family - wife, son, daughter and myself. I have been running this business for the last five years. Two years ago I purchased a SHS from Shell Renewables for Rs. 40,000 through a MFI credit scheme (07 bulbs, TV-B/W and radio). Initially we paid Rs. 7,000/- (down payment) and every month Rs.840 /- has to be paid for five years. Since the main grid is not available for villagers like us, this is the best source of electricity. It helps me to do my work at the

boutique, and my wife who is a dress- maker, can work in the night to finish the orders she has accepted.

Grant from Uva Provincial Council...

Mr A.Gunadasa - (Farmer- 20th Mile Post, Katharagama Road, Buttala, Moneragala District)

There are 6 members in our family, wife, 3 children, mother and myself. I purchased this solar panel from Shell Renewables under the grant scheme provided by the Uva Provincial Council (UPC). The actual price of the panel is Rs. 42,000/- I have to pay only Rs. 32,000/-. The balance was obtained through a MFI operated credit scheme. I paid Rs. 1,000/- as a down payment and every month I have to pay Rs. 1,050/- for three years. (seven bulbs, TV-B/W and radio) I don't have much experience in using the solar panel because it was purchased very recently. Before purchasing this panel I spent over Rs.500/- per month for kerosene oil and to get the battery charged. After repaying the loan I can get electricity free for my house.

Very Convenient for My Work and for the Children's Studies...



Mr. S.A Ariyaratne (Retail Shopkeeper - No 595, Kudagam 19, Weerawila, Hambantota District)

There are four members in my family - wife, daughter, son and myself. I am running a small business (retail shop). We purchased this solar panel from SELCO Solar which is worth Rs 26,500/- (Four bulbs, TV- B/W and radio) on credit. First we made a down

payment of Rs. 7,685/- and the balance has to be paid in two Rs 12,000/- instalments within

a year (once in six months). It is very convenient to carry out activities in my retail shop and for my children to do their homework. Now I feel that they are doing well at school.

No Worries about Children's Safety...

Mr. D.M.Sarath- (Farmer- No 323, Kudagam 19, Weerawila, Hambantota District)

There are six members in my family - wife, four children and myself. My wife is working in the Middle-east as a housemaid. All my children are schooling. Now I don't have to worry about using a kerosene lamp. At night, children do their homework and I can have a peaceful sleep without any fear. We purchased the panel recently (in February 2001) from SELCO Solar for Rs. 26,500/-. Initially we paid Rs. 7,685/- as a down payment. We have to repay the balance within one year, in two Rs. 12,000/- instalments.

Good for Business...

Mr. L.D.Pemarathna- (Businessman - No 314, Kudagam 19, Weerawila, Hambantota District)

About six months ago three officers from SELCO Solar came to our village and conducted an awareness creation programme for solar home systems. At that time I understood the advantages of this system and I thought this was the best source of electricity for villagers without access to the national grid. I purchased the SHS on November 28, 2000, for Rs 26,500/-. I did not have to spend any money for house wiring, everything was taken care of by SELCO Solar. A down payment of Rs 7,680/- was made initially and thereafter I have to pay Rs. 2,146/- every month over a period of one year. There are seven members in my family. I have been running a cement block making enterprise over the last five years.



Will Recommend Solar Panels Anytime...

Ms R.P.Sriyawathi- (Housewife-Rekawa West, Netolpitiya, Hambantota District)

Our family consists of five members - my husband three children and myself. My husband is a fisherman. All my children are schooling. Now I cannot spend even one day without solar lighting, if we light ten kerosene lamps we cannot get so much light. At night when the children do their homework I don't have to hover over them as I don't have to worry about them getting harmed by using kerosene lamps. We purchased this panel five months ago from SELCO Solar for Rs.42,000/- on credit. We made an initial payment of Rs. 10,000/- thereafter over a period of five years, we have to pay Rs. 1,400/- every six months. (Eight bulbs, TV - B/W and radio). At the beginning some of our neighbours were hesitant to buy a system, as they were not sure of the technology. But now they come and inquire about the system. I will not hesitate to recommend the SHS as this is a good way to obtain electricity.

Off-grid Electrification – Village Hydro Schemes

The ESD financed village hydro schemes are gaining momentum and as at March 31, 2001, 13 projects have been implemented or PCI approval has been obtained for funding. Kegalle district has registered the largest number of village hydro projects implemented under the ESD Project while just two projects have been implemented in Matara district and one in Ratnapura district.

Village Hydro Projects Implemented/Approved by PCIs (as at March 31, 2001)

Project Name	District	Province	Number of Households		Installed Capacity in KW
			Planned	Actual	
1. Madabaddara	Ratnapura	Sabaragamuwa	40	39	4.5
2. Pathavita	Matara	Southern	100	83	8.5
3. Kandaloya	Kegalle	Sabaragamuwa	80	80	10.0
4. Hettikanda-Marandola	Matara	Southern	21	21	7.0
5. Hardunella VH	Kegalle	Sabaragamuwa	50	50	13.0
6. Berannawa	Kegalle	Sabaragamuwa	59	59	6.0
7. Gedarawatta	Kegalle	Sabaragamuwa	40	40	12.0
8. Gollahinna/Kambili Oya	Kegalle	Sabaragamuwa	76	76	22.0
9. Kudaoya Electricity Project	Kegalle	Sabaragamuwa	60		15.0
10. Kethigana Ela/Panwala	Kegalle	Sabaragamuwa	25		7.5
11. Watagala	Kegalle	Sabaragamuwa	60		10.0
12. Kawudubuluwa	Kegalle	Sabaragamuwa			12.0
13. Panvila Arunalu	Kegalle	Sabaragamuwa	50		12.0
Total			661	365	139.5

Please refer map of Sri Lanka given in Annex 1.

An initiative has been launched to further develop the village hydro industry. Provincial authorities including those from Sabaragamuwa, Uva and Southern Provincial Councils have

expressed interest in incorporating village hydros in their rural electrification plans. As a result several more village hydro schemes will come into operation.

Village hydro schemes set up under the ESD Project have been established by electricity consumer societies (ECSs) with the assistance of consulting firms. The consulting firms assist in social mobilization, formation of ECSs, preparation of feasibility studies, business plans and other documentation required by PCIs for loan approval. Currently the following consulting firms provide inputs under this Project.

- Consultancy and Professional Services (Pvt) Ltd (CAPS)
- ITDG South Asia
- ENCO (Pvt) Ltd
- Integrated Development Association (IDEA)
- Renewable Energy Development Co Ltd (REDCO)
- Sri Lanka Business Development Centre (SLBDC)

Village hydro schemes are community owned projects driven by the community for the community. The membership of the ECS consists of those who will ultimately benefit from the electricity generated by the village hydro scheme.

Village hydro schemes established under the ESD Project are required to meet defined technical specifications, and on project completion consulting engineers verify the village hydro installations.

Protection of the Environment

All potential village hydro projects are required to get approval from the Environmental Impact Assessment Division of the Central Environmental Authority. This is a mandatory requirement under the ESD Project. The Central Environmental Authority has supported the ESD Project in its efforts to protect the environment. In certain areas where 230 V AC line connections have to run through forest and/or nature reserves the consent of the Department of Forestry or the Department of Wildlife Conservation as applicable have to be obtained.

Some Highlights of Completed Village Hydro Projects

- **Kudaoya Electricity Project**

Neluakkana is nearly 40 km from Kegalle town. Those who live out there, went through a lot of hardship everyday as they did not have electricity and because they had no access road to reach the village. They have to trek 2 km from the last bus stop to reach their homes. The entire village is Sinhala Buddhist, their main occupation is paddy cultivation, and they grow



Banana as well. Their accessibility to education facilities is very limited due to the remoteness of the village.

At the beginning of the new millennium they never anticipated they would have access to electricity so soon, but three brothers (Upul, Chaminda, and Kapila) made their dream true. These three brothers understood the potentiality of water and created awareness among the villagers in January 2000. They formed the Neluakkana Kudaoya Electricity Consumer Society with 54 members. That was the first stage of their effort. In the second stage, they invited REDCO, which provided them with technical support.

During the third stage the ECS decided to collect Rs 1,000/- each from every member household later they realized the collection was not sufficient and they raised the amount to Rs 5,000/- The ECS also applied for a loan of Rs 400,000/- from a PCI at an interest rate of 15%. Next they worked on building the tank and the powerhouse under the supervision of REDCO. Thereafter they installed the plant and they drew the distribution lines. Finally, they succeeded in getting 15 KW of power. The total cost of the project is Rs. 1,385,000/-.

The ECS members meet monthly and collect Rs 50/- from each household as maintenance costs and to review their work. The ECS is planning to conduct computer- training classes for their children during daytime.

Substantial Difference in My Life...

Mr A R Sumanarathna (Businessman)

There are three in my family - wife, daughter and myself. My wife worked abroad and returned with some electrical appliances. But for two years, we could not use these (TV, radio). When we were thinking of selling these appliances, this project was initiated. We contributed Rs 5,000/= towards this project and also participated in all the Shramadana activities. We used kerosene lamps for 35 years, but now we are using 40W bulbs and we are watching TV and listening to the radio with electricity. We never thought we would get electricity. With the help of electricity, I started a small retail shop and I am doing well now. Earlier I used to be engaged in casual work outside the village, but now I don't have to do so as my earnings are sufficient to live happily.



After 500 years...

Mr E Podiappuhami (Estate Owner)

We are five in our family - wife, three children and myself. Earlier I worked in the plantation sector, now I am retired and looking after my property. We could not be in perpetual darkness, so we applied for a grid connection. We also requested one or two politicians to provide us with electricity but our efforts were in vain. One day we had a

meeting at our temple to discuss the project. We paid Rs 5,000/= to get the connection and participated in Shramadana and finally succeeded of getting electricity. This is much cheaper than using a generator or using a battery to generate power.

- **Kandaloya Village Hydro Scheme**

C-poth Janapadaya is situated nearly 30 km from Yatiyantota, along the Yatiyantota-Nawalapitiya Road, in Kegalle District. The village consists of over 300 families and the



majority are Sinhala Buddhists. Their main occupation is the tea industry and they grow Kithul as well. Kithul toddy is famous in C-poth Janapadaya.

The village hydro concept was introduced to the village by Mr Ranasinghe, a Sabaragamuwa Provincial Councillor. An Awareness Creation Programme was conducted for the villagers with the help of the head monk of the temple. The resource persons described other

hydro projects that have been set up in Kegalle district such as Amanawala. An ECS was formed in 1996 with 50 members and work commenced thereafter.

Technical consultancy support was given by ITDG and IDEA. Initially Rs.3,000/- each from every member was collected. The villagers through Shramadana built the tank and the powerhouse. Further financial support (Rs 560,000/-) was extended by a PCI at an interest rate of 16%. As per the feasibility study, the total cost of the project is Rs. 1,178,252/-.

The scheme generates 10 KW of power, supplying 89 member families. Rs 150/- per month is charged from each member family as maintenance charges. One person has been recruited for maintenance work at a monthly remuneration of Rs 2,000/-. The society convenes meetings on a regular basis where they discuss and review the progress.

The society has given the electricity to the members without any control therefore the consumers are using fridges, heaters and even hot plates to cook meals. As a result most of the households claim of non-availability of electricity during 6.00 p.m.– 9.00 p.m.

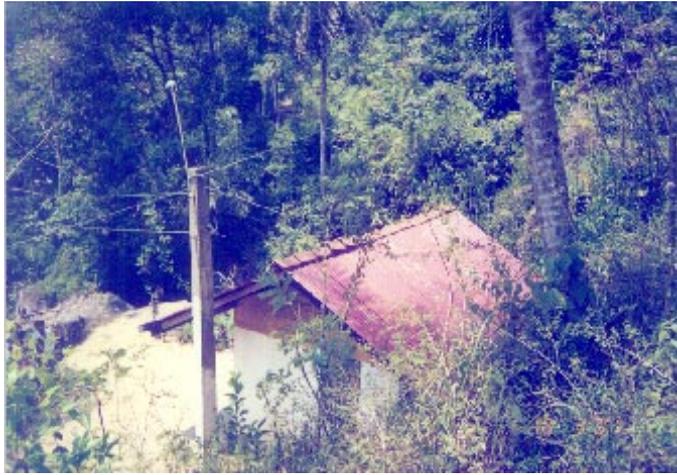
Dream Come True...

Ms Soma Devinuguru (Business woman)

We never thought we would get electricity. I had a small shop which was open from 8.00 a.m. to 6.00 p.m. but now I have expanded my business to include a grocery shop and restaurant. Now I am open from 6.00 a.m. to 9.00 p.m. Earlier we all had problems cleaning the smoke from the kerosene lamp which spoiled our walls but now we live in a smoke free

environment. This is cheaper than grid supplied electricity because I am only paying Rs. 150/- each month.

- **Berannawa Village Hydro Scheme**

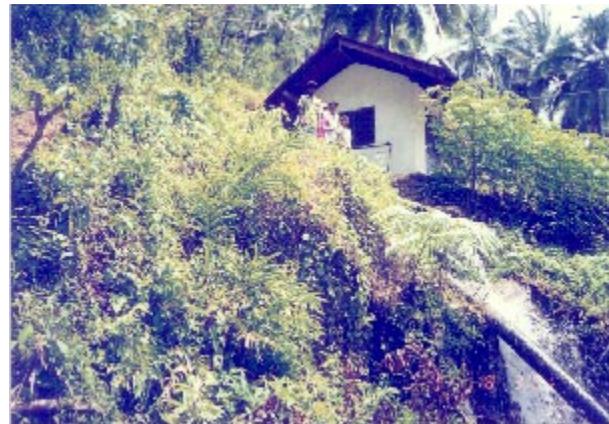


Berannawewa is 2.8 km from Yatiyantota in Kegalle District. The majority are Sinhala Buddhists. It consists of 311 families. Their educational background is fairly good. The primary occupation is in the tea and rubber industry. In addition paddy is cultivated. The village is far away from the main grid electricity supply.

The Sabaragamuwa Provincial Councillor, Mr. Ranasinghe, initiated the project. At village level, Mr. Gunapala, Mr. Jayasekera and Mr. Ariyadasa took the lead. They conducted an awareness creation programme for the villagers. They also studied the Amanawala and Kandaloya village hydro schemes.

On December 14, 1999, they formed the Berannawa Hakkal-alla Electricity Consumers Society with 35 members. Next, they encouraged more villagers to obtain membership and commenced the first stage of the Hydro Project with 55 members.

Initially they collected Rs 4,125/- from each member family. They took a loan of Rs 636,000/- from a PCI. CAPS provided consultancy input and technical assistance was provided by IDEA. During this period, they experienced strong political pressure from some of the villagers but they succeeded in overcoming these problems. As per the feasibility study, the total cost of the project is Rs. 1.2 million.



Through Shramadana the civil works were completed and power distribution lines were laid and they succeeded in getting 6 KW of power. However, CAPS informed the members that there was sufficient capacity to generate more electricity, therefore the villagers added a 15 KW dynamo and are now generating 15 KW of power.

The ECS supplies 100W of power per member family, who are residing within 2 km, and charges Rs 400/= per month. Electricity is supplied free of charge to the school and to the owner of the land where the powerhouse was built.

Can't Imagine...

Mr Gunapala Marasinghe (Schoolteacher)

There are six members in my family. I am a full time teacher and I am involved in the tea industry (small scale) on a part time basis. We never thought we could get electricity. This is beyond our imagination! Earlier we used a battery only to watch TV and the kerosene lamp to light the house. Now, for Rs 400/= we get both! Our house maintenance cost is low now as we do not have to clean the walls and the roof to remove the smoke stains. Now, unlike earlier, our children concentrate more on their studies.



Turning Point in My Life...

Mr Gamini Seneviratne (Carpenter)

There are two people in my family – mother and myself. I am a carpenter and my mother is involved in the tea industry in a small scale. We paid Rs. 4,125/= to the society in order to get the connection and every month we pay Rs. 400/=. Apart from the connection to the house I have a separate connection to my work place, and I pay Rs. 175/= for that every month. Electricity was the turning point of my life! I use two machines to do my work effectively. In the future, I am planning to start a grinding mill, if the ECS permits.

● Pathavita Village Hydro Scheme

This scheme is somewhat different to other projects set up under the ESD Project.

Originally in 1992 a powerhouse was built with the help of a Rotary Club in Colombo. The capacity of this powerhouse was 5 KW and this phase of the scheme does not come under ESD Project, Under the ESD Project a second phase was initiated in Pathavita- Beralapanathara in Matara district. This project is managed by the Thunella Brian Electrical Company and was commissioned on September 19, 1997. The total cost of this Project is Rs. 848,776/-. Thunella Brian



Electrical Company contributed Rs. 265,420/- and a loan of Rs. 500,000/- was obtained from a PCI for a period of 8 years at an interest rate of 18%. Rs. 83,356 /- was contributed by Rotary Gami Havula. Loan coordination and consultancy support was provided by CAPS and technical support was provided by ITDG. The capacity of this powerhouse under the second stage supported by the ESD Project is 8.5 KW.

Now 82 houses and two retail shops have been supplied with electricity. About one and half years back, 103 houses were supplied electricity. However grid connections were offered to the village and about 20 consumers opted for grid-connected electricity. If the householders use CFL bulbs they can use a considerable number of bulbs. Color TV and during daytime, irons and heaters can be used. Every household is paying Rs. 140/- per month for the loan and the maintenance. One trained caretaker is given Rs.800/- every month.



Great Difference in Lifestyle...

Mr.D.K.Amarasingha – MD Thunella Brian Electrical Company

My family consists of three members – wife, son and myself. I am a tea cultivator, and my son is schooling. Around five years ago there was no electricity for every house in our village. After this project (second stage) was set up, we were able to provide electricity to every household. Actually now we can see a difference in the lifestyle of the villagers. Especially women can now get up early in the morning without any fear and those who slept early, now keep up till 11.00 p.m. Before getting electricity I used a battery to watch TV. Those days I had to go 4 km to recharge the battery twice a month. Now I don't have any such problem and I am also using a color TV.

Great Benefits...

Ms Sumanaseeli – Housewife

There are 8 members in my family, six children of which four are schooling. Earlier we used kerosene lamps and the children used to huddle close to the lamp to study at night. Even then the light was not sufficiently bright for them to study. But now they can do their studies well and we do not have to worry about their safety. During school days I have to get up early to prepare breakfast for my children. Now I can do it easily. Our household has very clearly benefited from this project.



Grid Connected Mini Hydro Projects

Mini hydro projects are typically run-of-the-river projects of less than 5 MW capacity. Under the ESD Project Credit Programme these projects are implemented within a standard power purchase agreement and small power purchase tariff. Mini hydro projects are commercial initiatives executed by private sector developers to supply electricity to the national grid. By March 31, 2001, 13 such projects have been commissioned or are presently underway. The table below gives details of these projects.

Grid Connected Mini Hydro Projects Approved by PCIs (as at March 31, 2001)

Project Name	District	Province	Project Development/ Dealer	Installed Capacity KW
1. Bambara Balu Oya	Ratnapura	Sabaragamuwa	Vidulanka Limited	3,200
2. Erapura Ganga	Ratnapura	Sabaragamuwa	Ceylon MKN Eco Power Pvt Ltd.	750
3. Carolina Estate	Nuwara-Eliya	Central	Mark Marine Services (Pvt) Ltd.	2,500
4. Panakura Oya-Minuwanella	Kegalle	Sabaragamuwa	Sunro Company (Pvt) Ltd.	320
5. Ellapita Ella-Maliboda Estate	Kegalle	Sabaragamuwa	Eco Power (Pvt) Ltd.	550
6. Delgoda	Ratnapura	Sabaragamuwa	Zyrex Power Company Ltd.	2,400
7. Glassaugh	Nuwara-Eliya	Central	Eco Power (Pvt) Ltd.	2,526
8. Mandagal Oya-Maliboda Estate	Kegalle	Sabaragamuwa	Eco Power (Pvt) Ltd.	1,271
9. Galaththa Oya-Pussellawa	Kandy	Central	Hydrodynamies (Pvt) Ltd.	1,200
10. Medapiti Oya	Nuwara-Eliya	Central	Natural Power (Pvt) Ltd.	1,500
11. Rat Ganga	Ratnapura	Sabaragamuwa	Eco Power (Pvt) Ltd.	4,650
12. Nividu	Ratnapura	Sabaragamuwa	Nividu Lanka Ltd.	2,000
13. Naya Ganga Mini Hydro Power Project	Kegalle	Sabaragamuwa	IWS Power Grid Ltd.	1,000
Total				23,867

Please refer map of Sri Lanka given in Annex 1.



Maliboda MH Project

Eco Power (Pvt) Ltd for example has set up two mini hydro projects in Maliboda Estate in Deraniyagala, Kegalle District. One is the Ellapita Ella Project with a capacity of 550 KW and the other is the Mandagal Oya Project (1.2 MW).

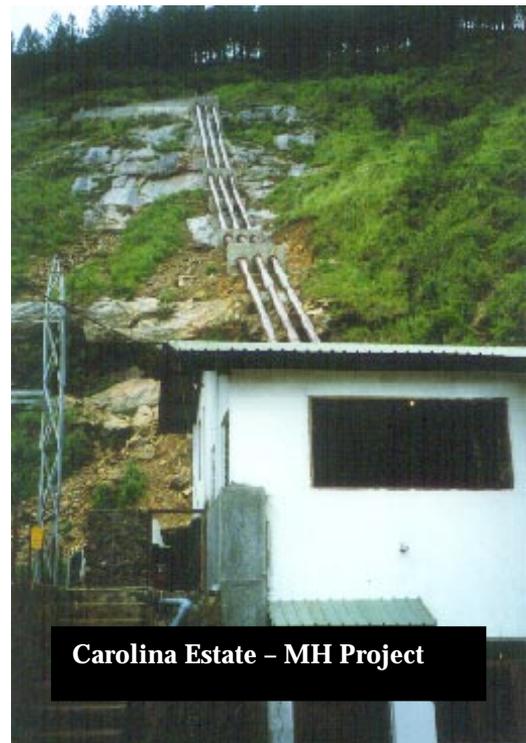
Mark Marine Services (Pvt) Ltd set up a 2.5 MW Project on Carolina Estate of Watawela Plantations. The project, which took 13 months to complete, was commissioned in June 1999. The total investment was Rs 225 million and funding was obtained under the ESD Project from two PCIs. Mark Hydro (Pvt) Ltd has just commenced a project to generate 1.3 MW of electricity. This Project is to be located upstream of the same river.

Mini hydro developers have formed an Association. This Grid Connected Small Power Developers Association was established in 1997. At present approximately 13 companies are members of this association, which levies

membership fees. The Association safeguards the interests of members and is presently lobbying for greater transparency in the tariff computation methodology and data inputs.

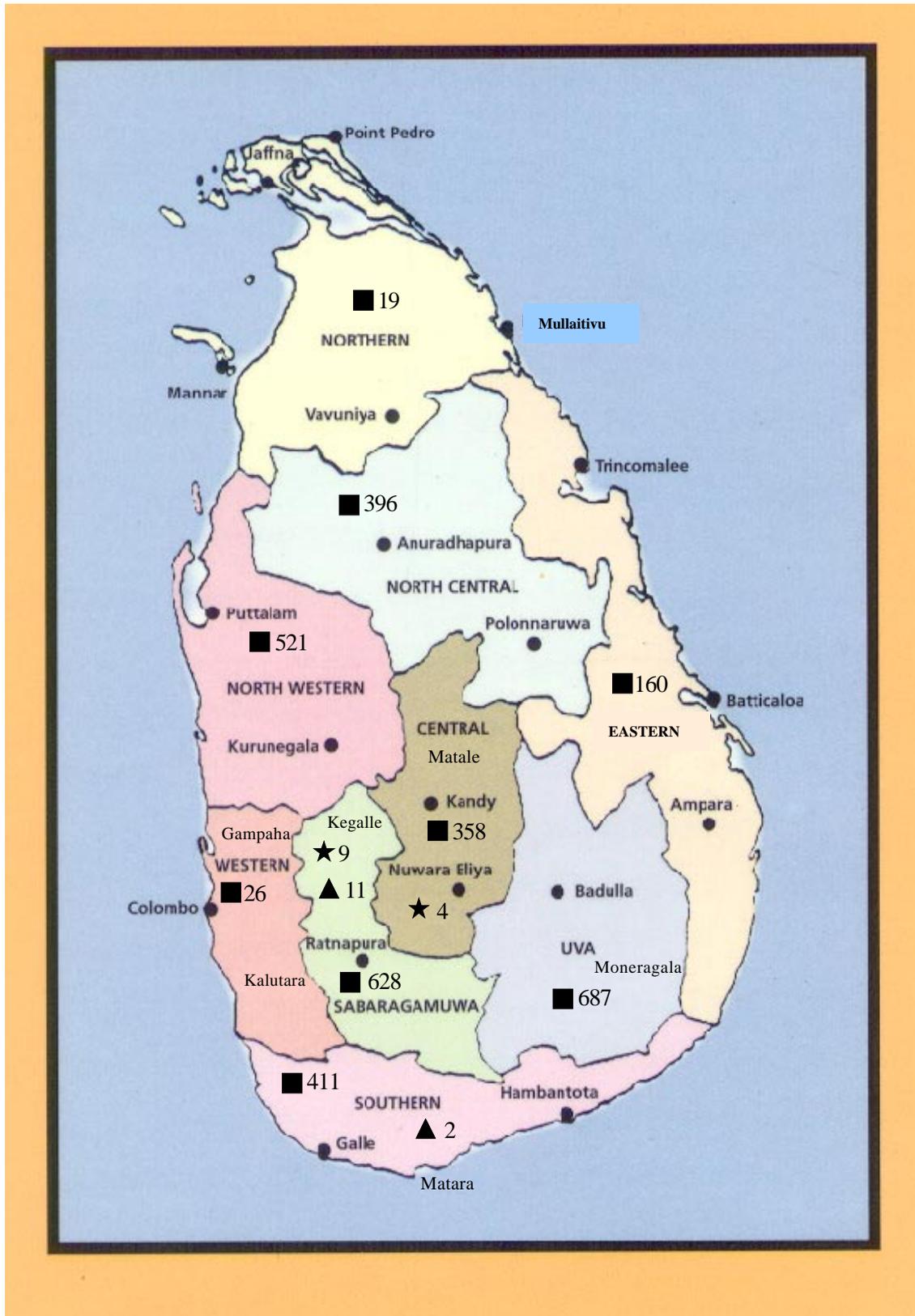
According to Mr Anil Makalanda, Secretary of the Association to date 13 MW is on line and another 18 MW are under construction. The Ceylon Electricity Board has issued letters of interest (LOIs) for 147 MW and has yet to issue LOIs on another 20 MW. Therefore there is tremendous potential for setting up mini hydro projects, especially with the demand for power growing at over 100 MW per year.

Mr Makalanda was of the opinion that the untapped potential for setting up of Mini/Small Hydro schemes could be successfully exploited only with the assistance of a special credit programme such as the one operated under the ESD Project. He also noted that the ESD Project has supported their Association.



Carolina Estate – MH Project

ESD Project Interventions Geographical Distribution





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For more information:

Contact: Mr Jayantha Nagendran
DFCC Bank
E-mail: dfccplan@sri.lanka.net

Or: Mr Vijay Iyer
World Bank
E-mail: Siyer1@worldbank.org