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Bumper harvest from sustainably managed farmlands

A model for intersectoral collaboration in degraded land rehabilitation



Renovated Kalubululanda Tank

Restoration of the Dambugasagala Forest and the Kalubululanda Tank were recognized as top priority in land use planning initiated by the Rehabilitation of Degraded Agricultural Land Project (RDALP) of the Food and Agriculture Organization of the United Nations. This forest reserve is in the micro catchment area that preserves water for farmlands, inhabitants of the village and downstream villages.

It was identified that 28 percent of the total land extent in the Dambugasagala micro catchment area was encroached for settlement or cultivation and therefore forest cover was extremely low. Farmers in the area are already experiencing adverse impacts of land degradation such as productivity decline of their arable lands, high cost of production, diminishing of water sources and siltation on lower slopes.

Restoration of the Dambugasagala Forest
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Reserve is only a part of the whole degraded land rehabilitation process. It was carried out with the participation of the community and all other stakeholders who are responsible for land resource management.

Intersectoral collaboration

“The most important aspect in RDALP’s approach to Sustainable Land Management (SLM) is intersectoral collaboration,” said Field Coordinator of the FAO Upul Jayaweera. This process is facilitated by all relevant government agencies and they collectively work with the community to achieve a task. Repetition of work and bureaucratic bottlenecks were eliminated and decisions were taken based on practical situations.

“ In the participatory land use planning process, around 25 officers of 15 government agencies that are responsible for land resources management

participated,” Jayaweera said. This process also enabled the stakeholders to pool their resources to implement the plan. For instance, in the planning process all stakeholders agreed to conserve and develop the 4.2 hectares of degraded government land as a forest reserve. The divisional secretary resolved issues in demarcation of the forest reserve. A fence was constructed around the forest and it was funded by the Department of the Provincial Land Commissioner, Uva. RDALP financed the survey charges for demarcation. The Forest Department supplied plants. Divisional secretary monitored planting while the village youth organization, school children and community were involved in planting and maintaining the forest.

Kalubululanda Tank restoration

To improve groundwater level in the micro watershed area, it was decided to renovate the Kalubululanda Tank. The tank, constructed by a British planter had been an important component in the agro ecosystem of Dambugasagala in its 70-80 years known history, as per its elders. However, the tank had been dilapidated by siltation, encroachment and other unsustainable land use practices in the surrounding farmlands. Under the RDALP initiative, it was decided to reserve and conserve the tank

catchment area and rehabilitate the tank. RDALP invested Rs.1.1 million to renovate the tank. The project interventions include restoration of tank bed by removing silt, construction of tank bund and spill gate and introducing SLM best practices including soil conservation technologies to the farmers in the village. RDALP provided financial support and training and awareness on SLM and value of ecosystems. The project will benefit around 1 300 farmer families.

The tank is not used for direct irrigation purposes as the main objective is recharging and enhancing ground water in the catchment area. This Percolation Tank model has been used in ancient Sri Lanka. British planters too had constructed several small tanks in the central highlands for the same purpose.

Most lands in the Dambugasagala micro watershed are covered with vegetable cultivation and other dominant land use/cover categories are mixed crop and tea lands. “In the planning process we identified open scrub lands which can be restored to improve the forest cover,” Jayaweera said.

RDALP with the LUPPD has prepared land use plans using participatory approach for 64 micro watersheds in Kandy, Badulla and Nuwara Eliya Districts in the central highlands.



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A water stream flows through the restored Kalubululanda forest reserve

Farmer Field Schools for tea smallholdings



TSHDA officers and resource persons participated at the FFS training

The Rehabilitation of Degraded Agricultural Land Project (RDALP) of the Food and Agriculture Organization of the United Nations has begun Farmer Field Schools (FFS) - a group-based learning process to promote Sustainable Land Management (SLM) in tea smallholdings.

The project is working to arrest land degradation and rehabilitate the degraded lands in three land use types in the central highlands. They are home gardens, tea and vegetables. RDALP successfully introduced FFS to promote SLM in home gardens and vegetable cultivations and achieved impressive results.

The curriculum of FFS consists of pests and diseases, plucking, pruning, soil conservation, fertilizer application, shade management and soil fertility improvement. RDALP conducted its first training program for officers of the THSDA recently on how to conduct FFSs. The training program was held at THSDA Training Centre, Haliela, Badulla. Regional Manager Uva Province, Assistant Regional Managers, Tea Extension Officers and Tea Inspectors of the THSDA participated in the program. They will start FFSs for tea smallholders in the Badulla District.

Value water and land equally

World Water Day was marked on 22 March and this year theme is 'Valuing water'

We learn very young that life cannot exist without water. Yet over 2 billion people still lack access to safe water today.

The importance of water for land is obvious: humanity's relentless production and consumption relies heavily on water use and is a prime cause of desertification and land degradation.

Land degradation and desertification reduce evapotranspiration, disrupting regional rainfall patterns. In contrast, healthy land promotes

consistent seasonal and annual rainfall and aids flood mitigation, soil health and aquifer recharge, helping to bring back landscapes from the brink.

Land restoration is a vital ally to World Water Day. As we celebrate today, let's remember that we must value water and land equally as part of the same challenge – to build a better, more equal, healthier planet post COVID-19.

(From the statement by UNCCD Executive Secretary Ibrahim Thiaw on World Water Day)

Innovative Financing Mechanisms for Sustainable Land Management

Payment for ecosystem services has been identified as one of the best Innovative Financing Mechanisms (IFMs) by a study conducted by the Rehabilitation of Degraded Agricultural Land Project (RDALP) of the Food and Agriculture Organization of the United Nations. The International Union for Conservation of Nature (IUCN) -Sri Lanka conducted the study on behalf of the RDALP.

Payment for Ecosystem Services

The report points out that Payment for Ecosystem Services (PES) is a good approach that gives positive incentives to change behaviour of the land users to better manage ecosystems. Another study conducted by RDALP and IUCN attempted to give monetary value for ecosystem services such as pollination, water purification, water retention and soil retention. The objective of the study was to educate land users on real value of the benefits of ecosystem services.

In a PES scheme, the beneficiary or user of an ecosystem service, pays the provider (monetarily or in-kind) to ensure the provision of that service through better management. The report stated that there is potential for development of PES schemes in Sri Lanka. It highlighted a case study, the Ganthuna Mini Hydropower Project as a model and said there was potential for similar schemes in Kandy, Badulla and Nuwara Eliya Districts.

The Ganthuna Mini Hydropower Project is located in the upper catchment of Gurugoda Oya Basin, one of the main sub river basins of the Kelani River. In this IFM scheme, the hydropower operator provides financial inputs to upstream farmers and communities to better manage their lands and restore the catchment areas. In return the hydropower operator benefits from the ecosystem services - a steady water flow and good water quality.

Re-allocation of Public Budgets

The report suggests the Re-allocation of Public Budgets as an IFM. The study mainly focused on the fertilizer subsidy provided by the government for inorganic fertilizer used in paddy cultivation.

The report also points to various previous studies on this fertilizer subsidy scheme to highlight its positive and negative impacts to the economy and



Pollination, one of the most important ecological services that farmers do not know the monetary value

ecosystem. This financial subsidy for yield enhancing inputs is neither cost effective nor sustainable. The reallocation of public budgets, is considered under the broad umbrella of IFMs. However, developing such an IFM and implementing it in Sri Lanka would be complex due to the various institutions involved and structural hurdles, the report stated.

Sustainability standards

A sustainability standard is a set of rules or principles that define good environmental and social practices for producers, traders, retailers, manufacturers or service providers to follow. They can be applied for farm products. Such standards are already in place Fair-trade Certification and Good Agricultural Practices (GAP) certification in Sri Lanka recognize farmers who ensure “quality and safety of agricultural commodities”. RDALP

supports the GAP program of the Department of Agriculture and Sarubima - the agriculture modernization project of Cargills PLC to introduce SLM to vegetable farmers in the central highlands.

In this approach RDALP has already proved GAP as an effective IFM. The voluntary certification promotes agribusiness by increasing market linkages, increasing the profits of farmers and encouraging farmers to adopt sustainable practices. This can be done in formal ways such as certification, branding and labeling or informal ways with mutual trust between the farmer and purchaser of the products.

Agro -Ecotourism

Considering the aesthetic value of farmlands and damages that unsustainably maintained lands add to the ecosystems and environment, there is potential of combining tourism with SLM. Tourism mainly depends on aesthetic values of the ecosystems which is the main tourist attraction in the central highlands of Sri Lanka.

The report highlights eco-tourism options such as spice gardens, tea plucking and organic farming as potential areas for development of financing mechanisms. In addition, partnering with hotels pursuing sustainability will provide opportunities for direct market linkages, where the farmer has an incentive to pursue SLM practices and the hotel can advertise a farm to table concept, the report said.

Corporate Social Responsibility (CSR)

CSR helps companies live up to their responsibilities as global citizens and local neighbours. A coherent CSR strategy, based on

integrity, sound values and a long-term approach, offers clear business benefits to companies and a positive contribution to the well-being of society and planet. CSR includes business process re-engineering as well as the funding of charitable activities which could be directed towards the promotion of SLM practices in agriculture.

Risk Schemes

The report recognizes Disaster Risk Insurance schemes (against a premium) which cover the costs incurred by the insured entity from extreme weather and natural disasters such as drought and floods, as an IFM. If the risk occurs, the insurer refunds a percentage of the costs incurred.

Insurance schemes are widely used to increase household and enterprise resilience to external shocks by reducing future expenditure. Environmental risk insurance schemes cover environmental liabilities such as financial risk associated with environmental pollution and contamination in exchange of a premium. In addition, to prevent future expenditure to realize and reduce business risks they provide contingent resources for immediate remedial action in the event of an environmental disaster.

Green Lending

Lending facilities by banks or other lending schemes with conditional criteria for environment protection and SLM have been proposed as IFM in the report. These criteria can include an identified sub-sector such as climate change adaptation or reference to certain best practices such as certification of sustainable agricultural/ forest management practices.



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Artificial pollination of vanilla flower

A lesson in Sustainable Land Management



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Sapugasulpotha micro watershed covers several small villages in the Bandarawela Divisional Secretariat Division of the Badulla District. In 2018 the Rehabilitation of Degraded Agricultural Land Project (RDALP) of the Food and Agriculture Organization of the United Nations introduced Sustainable Land Management (SLM) programs for this area. The project covered home gardens, tea smallholdings and vegetable farmlands for rehabilitation, introducing SLM technologies and approaches to farmers.

Considering the severe degraded condition of the lands, the Divisional Agriculture Committee headed by the Divisional Secretary selected and approved this micro watershed for rehabilitation.

Thereafter, the Land Use Policy Planning Department (LUPPD) along with the communities and other stakeholders prepared a land use plan using the participatory land use planning process.

Based on the land use types and degraded levels, RDALP with the relevant government agencies introduced SLM for selected farmlands. Appropriate soil conservation technologies, measures to address soil and water pollution and suitable crops were introduced to the lands based on individual farm plans. RDALP provided financial grants for soil conservation, plants, seedlings and other material support to start cultivation. Technological instructions were provided by relevant government agencies.

Farmer Field School

On 25 March 2021 RDALP organized a Farmer Field School (FFS) for home gardening. This is the fifth FFS conducted in a village for home gardening. With the success of SLM initiatives of the RDALP, presently there is a demand for similar programs.

The FFS was conducted by the field officers of the Department of Agrarian Development (DAD) with around 20 women participating.

Agriculture Research and Development Officer Mangalika Karunaarachchi said that women dominate home gardening. “There are several government programs to promote home gardening islandwide as a measure of ensuring food security. We follow the models and approaches introduced by the RDALP to promote home gardening and SLM. The group-based learning process – FFS introduced by the RDALP, is a very successful approach,” she said. She said that the land use plan prepared by RDALP with individual farm plans has a special advantage to the Sapugasulpotha Division. “When new projects or programs related to agriculture are launched in the Bandarawela Divisional Secretariat Division, Sapugasulpotha gets priority, because we have all the details to select beneficiaries and lands for an appropriate project. Many of our beneficiaries have already received polytunnels from another government program for vegetable cultivation.

The farmers engaged with RDALP in tea and vegetable cultivation and home gardening now

reap benefits. They get an income and their home gardens provide fruits and vegetables for family consumption.

Women are the main beneficiaries and as a result now there is a demand from women to join FFSs.

Success stories

Sunilka Lakshmee

Sunilka joined the RDALP in 2019 and participated in training programs on SLM. She rehabilitated her home garden based on the farm plan prepared under the land useplan.

“Our land is sloped and as a result it was eroded and degraded. We applied conservation technologies recommended by the officers.

We received fruit plants, a cash grant for soil conservation and training in all important aspects of home gardening. Today we produce fruits and vegetables for family consumption and earn an income from selling the excess,” she said.

A.M.Piyangika Samanmalee

Piyangika started gardening and tea cultivation in her home garden with the support of RDALP. Most of the lands in the area are small plots. However, Piyangika has a relatively large land area of around half an acre.

“When I joined the project my land was not in use. It was covered with wild bushes and subject to soil erosion and degradation. The officers pointed out its potential for tea and vegetable cultivation, blessed with the advantage of the climate of the area. I cultivated tea in a part of the land and used the other for vegetable cultivation. Now I earn income from both. Orange and pomegranate plants given by the RDALP are bearing fruit now,” she said.

H.M.Anulawathi

Anulawathi and her daughter S.M.Chamini

Anjula have successfully rehabilitated their neglected garden under the project.

“RDALP helped us to develop our neglected land and earn a good income. I joined the project and participated in all the training and awareness programs organized for the farmers. I got a farm plan which pointed out the potential for starting a tea plantation. I began tea cultivation on quarter acre. The project granted money for soil conservation and fruit plants for intercropping. The Tea Small Holdings Development Authority (TSHDA) provided tea plants and technical assistance. Today, I earn an income from tea and oranges - planted as an intercrop. I also maintain a home garden and it gives vegetables for family consumption as well as an income from the sale of the excess,” Anulawathi said.

H.M. Leelawathi

H.M. Leelawathi successfully maintains an economically viable home garden. It is relatively large and targets a higher production beyond that of family consumption. “RDALP always encourages women to maximize use of their home gardens so that in addition to products for family consumption they can have an income from selling the excess. We get a good income from vegetable cultivation. We had not used our land or the great climatic conditions that nature has given us to produce vegetables and fruits. Now all the beneficiaries, mainly women, earn good incomes from their rehabilitated and cultivated lands,” Leelawathi said.

“This climate and soil are ideal for orange cultivation. The project has distributed over a thousand orange and pomegranate plants for the beneficiaries in this area. Now the plants are bearing fruit. We collectively produce large numbers of oranges and are considering a better way of marketing them and also of expanding orange cultivation,” she said.



Farmers in Pambadeniya reap benefits of Sustainable Land Management



Sriyani Gunasekara

Pambadeniya village in Doluwa divisional secretariat division in the Kandy district is a model village of implementing Sustainable Land Management (SLM) practises. There are lot of farmers in Pambadeniya who are now reaping benefits of applying SLM in their lands. Rehabilitation of Degraded Agricultural Land Project (RDALP) of the Food and Agriculture Organisation of the United Nations in 2018 introduced SLM programs for the severely degraded tea small holdings and home-gardens.

Sriyani Gunasekara joined the project and developed her home-garden according to the instructions she received at the training and awareness programs organized by the RDALP. She has 15 perch small land. But she grows vegetable and other crops for family consumption. She also maintains small vanilla cultivation in it.

“Home gardening gives fruits and vegetables for family consumption. It is a support for the family budget. I did not know anything about vanilla cultivation. After joining the project now, I know it well. Still, we do not receive income from vanilla but we expect a good income in the future” she says.

Sriyani has applied SLM technologies, especially soil conservation methods in her garden. She uses all degradable solid waste for compost production. Materials such as dry leaves, saw dust and straws are being used as mulch in her garden. Sriyani and other vanilla farmers in Pambadeniya are struggling to protect their crops from the drought.

Water scarcity is the serious issue they have faced. However, Sriyani says that the plants in her home garden are more resilient to the drought now due to SLM technologies they use.

Promotion of Sustainable Land Management in home-gardens



Officers and resource persons participated at the training program

Rehabilitation of Degraded Agricultural Land Project of the Food and Agriculture Organization of the United Nation continues the promotion of Sustainable Land Management (SLM) programmes for home-gardens in Badulla and Kandy districts.

Home-garden is one of the main land use systems in the country and it accounts a significant share of the land area. The land degradation in home gardens is a serious issue and the RDALP attempts to rehabilitate these degraded lands.

RDALP is now working to replicate the demonstration models successfully completed through relevant government agencies or providing technical assistance to governments' home gardening programs. In this new approach RDALP uses Farmer Field Schools (FFS) to disseminate SLM.

RDALP conducted series of training programmes for the officers of the Department of Agrarian Development (DAD) in the Badulla and Kandy districts on how to conduct FFS. Two training programs were conducted for all Agriculture Research and Development Officers of the DAD in Bandarawella division.

Two training programs on FFS were held for the field officers of Doluwa DS division in the Kandy district.

At the beginning, the training program was conducted for the field officers who voluntarily join

with the pilot projects. In the Doluwa DS division 22 officers joined in the training program. They have already started FFSs for home-gardening.

Smurdhi Development Officers of the Doluwa DS division will also join with the project. The officers who participated at these training programs have been conducting FFSs for the farmers. In FFSs the farmers are educated on how to connect family nutrition with home gardens and produce agricultural products for family consumption with higher nutritional value.

In the FFS the farmers are educated on soil composition, soil degradation, soil erosion, importance of soil conservation, soil health, soil biodiversity, live soil and soil conservation methods.

The sessions also focused on how to improve soil quality, use of compost and compost production in home-gardens. The FFS also focused on plant nutrients and the farmers are trained on how to identify the availability of plant nutrients, symptoms of deficiencies and how to supply them. The training also included water management, waste management, pest and diseases and how to control pest and diseases in home-gardens.

The other training modules of the FFS are; fence management, plant placement, nursery management, planting of annual and perennial crops, plant pruning and plant training. All then training sessions are conducted with a participatory approach and group activities with practical examples in the field.

GAP certification

A successful approach in modernizing agriculture



Cargills vegetable collection center in Rikillagaskada pays higher price for GAP certified products

Balagolla, is a village in the Hanguranketha Divisional Secretariat Division of the Nuwara Eliya District. It is one of the main farmlands that produced a significant share of vegetables to cover local market demand. Located in the eastern slope of the central highlands, it is blessed with a favorable climate and soil for vegetable cultivation.

However, the dry climatic conditions and sloped terrain also pose challenges for farmers. They mainly depend on the North Eastern Monsoon rain, from October to January and cultivate one cropping season. In addition to natural challenges, impacts of their own unsustainable practices have posed them challenges. As a result of the unsustainable use of the sloped lands over decades and destruction of forest reserves in sensitive catchment areas of rivers, they now face a severe shortage of water for farming.

This is the most sensitive catchment area of the Mahaweli River. All water streams that flow through the area directly go into Victoria or Randenigala Reservoirs in the downstream. Therefore, land

degradation in the area directly affects the capacity of the reservoirs by silting.

Considering the gravity of land degradation, its impacts to the economy and environment and various issues faced by the farmers, the Rehabilitation of Degraded Agricultural Lands Project (RDALP) of the Food and Agriculture Organization of the United Nations selected Hanguranketha Divisional Secretariat Division to implement Sustainable Land Management (SLM) programs in vegetable cultivation.

RDALP uses the market based Good Agriculture Practices (GAP) approach that has been recognized as one of the best innovative financial mechanisms for SLM. In this initiative, RDALP works with the Department of Agriculture (DoA) and Cargills (Ceylon) PLC in Hanguranketha and several other areas of the central highlands. In this approach RDALP also attempts to strengthen public private partnership in SLM.

Sustainable land management through modernizing Agriculture: **Success stories**



Chandrika and Nishanthi

Chandrika Kumari (49) and Nishanthi Nishanka (44) are two women beneficiaries of the RDALP who have changed their destinies and improved their socio-economic situations by modernizing agriculture.

They were traditional farmers who cultivated vegetables once a year during the monsoon season. Farming was not lucrative to them, as to the other farmers here. Extreme weather conditions such as drought, market volatility (especially over production that drops prices below the cost of production) degraded lands, low productivity and high cost of production affect their crop yield, income and lives.

In 2019 Chandrika and Nishanthi joined RDALP as beneficiaries. They began a joint agricultural venture with the support of the Department of Agriculture (DoA) and Cargills (Ceylon) PLC. After joining the training and awareness programs organized by the project, they cleared half an acre of land to begin the first modern model farm in the area.

“Agriculture Instructors Prageeth of the DoA and Prasanna of the Provincial DoA (Central)

motivated us to implement this venture, assuring us a higher yield and income. We invested money for land preparation and Cargills PLC provided a state-of-the-art drip irrigation system along with a soft loan of Rs.175000 over a long grace period, to cover other costs. We formed a farmer organization initially consisting 12 farmers and collectively work, supporting each other,” they said.

“The drip irrigation system resolved the water issue, the main challenge we faced. Now we cultivate three or four cropping seasons per year and apply fertilizer through the drip irrigation system. This has reduced fertilizer usage significantly. RDALP provided insect proof net to cover the whole farm to lessen pests and diseases. We use plastic mulch and this has cut labour cost sharply. We can cultivate three or four cropping seasons in the same beds without land preparation. There is no need of weeding and we do not labour all throughout the day on farming. We have time to do our routine household chores - cooking, washing and attending to our children’s education needs. Therefore, we see farming as an interesting and decent job now,” Chandrika said.

They have now cultivated long beans on their farm and are profiting from the seasonal short supply of vegetables, expecting a much higher price during the New Year festival season. Although most of the traditional farmers have ceased farming during this drought period, all GAP certified farmers continue farming in their modernized farms.



Dhammika

Chairman of the Karalliyadda Fruit and Vegetable Exporters Association Dhammika Jayasekara said that GAP certified farmers in Adhikarigama get a higher price for their products. The GAP certification ensures that these farm products meet quality standards. RDALP organize farmers for the GAP program through awareness programs and farmer field schools. Agriculture extension officers of the DoA work closely with farmers to ensure that GAP principles are applied at every stage of production. DoA and Cargills PLC have linked the farmers with markets and rescued them from exploitation by intermediaries.

“We started this program with the cultivation of bitter gourd for the export market. It was highly successful and farmers got a good price. We delivered around 1000 kg vegetables to an exporter at Katunayake Airport daily from our farmers. This ended with the Covid 19 outbreak in March 2019 and we are trying to commence it again.”

“Cargills has set up a collecting center in Rikillagaskada, 16 km away from here and pay a higher price for GAP certified vegetables. We have planned to start another center in Adhikarigama to reduce transport costs and further expand the GAP program. Now we have 32 GAP certified farmers and the society gets a commission of Rs.2 per kilogram from the farmers. So the society is becoming financially strong. We use this fund to resolve issues faced by the farmers. We also work with government programs and other projects to address our issues. We are negotiating to get funds to set up tube wells for the farmers, Jayasekara said.

He said that modernizing agriculture is the only way to make the venture attractive for youth. It should be profitable and less burdensome. “We have proved this and attracted many young men and women to the GAP program. We have formed a Youth Farmer Organization. We do research on new

crops and new farming techniques.”

Jayasekara is an innovative farmer. Following YouTube videos, he successfully carries out a vanilla cultivation in a polytunnel. “Under this controlled environment we can get vanilla harvested all throughout the year. Normally vanilla is flowering once a year,” he said. He has also successfully cultivated strawberry on his farm, a strange crop to this dry climatic zone. Agriculture Instructor Praneeth Herath of the Agriculture Extension Division of the DoA acts as the district coordinator of the GAP program. He said that the highest number of GAP certified vegetable farmers are in



Praneeth

Hanguranketha Divisional Secretariat Division. “We have a good farmer team here and most of them are young. DoA provides technical knowledge and ensures that they follow GAP standards in the production process. RDALP provides technology and funds for the farmers to rehabilitate their degraded lands by applying SLM. Cargills PLC provides new agriculture technology and purchases farm products.”

“We ensure markets for their products. All these have made farming a profitable venture for them. They earn around Rs.500,000 per cropping season from a quarter acre of land. Now this area has become a demonstration site for the GAP program. Farmers who joined the program independently, carry it out and annually they get their GAP certificate renewed. We can see their living standards improving and we are happy,” he said.

Agriculture Officer, Cargills PLC Nuwantha Kasun said that more and more farmers are joining the program. “We receive requests from the farmers to join us and we direct them to the DoA. The DoA trains them and issues GAP certificates. We install drip irrigation systems on their farms. At our vegetable collecting centre we purchase GAP certified products at a higher price,” he said.



Nuwantha

Sustainable Land Management in tea smallholdings

Women of Pambadeniya take the lead



Pushpa Ranjaneer reaps benefits from applying SLM in tea smallholdings

Tea smallholdings account for 75 percent of the total tea production in the country. However, women's responsibility in tea smallholdings is greater than in the corporate sector. Not only in tea plucking, all responsibilities of poorly maintained small tea plots are with women, because the low income it brings, is not attractive to men. This is evident in Pambadeniya in the Doluwa Divisional Secretariat Division, Kandy District where the majority of tea small holdings are run by women.

The lead role of productivity improvement and Sustainable Land Management (SLM) in the tea smallholding sector in Pambadeniya is taken by the Women Home Garden Society of the Agrarian Service Center. RDALP trains and motivates the center members to implement and practice SLM in tea smallholdings.

Most of the women involved in the program have increased their income in a sustainable way. Although tea is the second largest export commodity of Sri Lanka less and less farmers are willing to invest in tea due to a regular decline in yield in the past decades. The yield has declined to an average of 350 to 400 kilograms per acre while in some lands it is as low as 150 kilograms per acre. But according to the Tea Research Institute (TRI) of Sri Lanka, the yield of a well-managed tea plantation could easily enhance to 1,000 kilograms per acre.

Pushpa Ranjaneer

Pushpa Ranjaneer of Pambadeniya is a courageous farmer and an active beneficiary of the RDALP. She has a two-acre tea land begun in 2004. Impacts of climate change such as long drought affected her tea cultivation and the plantation was neglected when

she joined the RDALP as a beneficiary in 2018. Her land was severely degraded due to soil erosion. The land did not have optimal tea plant density. Shade management and other important aspects of maintaining a healthy environment for tea had been neglected. RDALP and the Tea Small Holdings Development Authority (THSDA), the government agency responsible for the development of the tea smallholdings sector, helped Pushpa and other farmers to improve their tea cultivations. A series of training and awareness programs were conducted to educate them on SLM and maintaining a successful tea plantation.

Pushpa's land was subjected to soil erosion as she had not used any soil conservation method. The officers of the THSDA pointed out the degraded condition of her land and reasons for low yield. Low fertility of the soil was a major issue as the farmers mainly depend on NPK with chemical fertilizer and are not concerned about micronutrients and microorganism of the soil. Also, they do not consider the Ph level of the soil and organic matter content

when applying fertilizer.

“My income from the tea land increased significantly after applying SLM practices recommended by the RDALP and THSDA at training programs. The project provided cash grants for soil conservation and fruit plants for intercropping. Tea plants were provided by the THSDA for infilling. I used compost to improve the soil quality of the land and managed the shade. These measures contribute to high yield and income. The plants are more resilient to the drought now,” she said.

Empowering women in sustainable agricultural ventures such as tea can uplift the economic condition of a whole family. Successful tea smallholdings provide a stable monthly income for women with little variations taking place due to extreme weather conditions. RDALP provided fruits as an intercropping to address this issue. This women's society leads the home garden program with vanilla as an economical crop. Pushpa maintains a successful home garden and vanilla cultivation as well.

Cover story: Bumper harvest from sustainably managed farmlands

Madushanka Rathnayake (29) a farmer in Mandaram Nuwara in the Nuwara Eliya district collects harvest in his potatoes cultivation done by his own seeds.

In early 2020, Rehabilitation of Degraded Agricultural Land Project (RDALP) of the Food and Agricultural Organization of the United Nations together with the Departments of Provincial Agriculture Uva and Central provinces conducted Farmer Field Schools (FFS) to disseminate SLM best practices among potatoes farmers in the Badulla and Nuwara Eliya districts.

Potatoes cultivation in the central highlands leads to severe soil degradation in two ways; by soil erosion as a result of loosening soil in frequently and soil and water pollution by extensive use of chemical fertilizer and agrochemicals.

RDALP provides high quality seed potatoes to the farmers and now the farmers re-produce high quality local potato seeds more resilient to the climate, pest and diseases and low cost.



Empowering farmers with mobile communication technology

Information and Communication Technology (ICT), particularly the mobile phone, is a wonderful tool that can be used in the development of agriculture. The technology is already applied to connect farmers with markets, give them information on the weather, provide advisory services and early warning systems. There are many success stories worldwide, especially in developing countries.

The Rehabilitation of Degraded Agricultural Land Project (RDALP) of the Food and Agriculture Organization of the United Nations has used the mobile telephone and social media to continue the knowledge and experience sharing process initiated by Farmer Field Schools (FFS) through digitally connected farmer organizations. In this process RDALP organizes farmers and agriculture extension officers in WhatsApp groups.

“This is an attempt to modernize FFS with ICT and ensure it as a sustainable process to build ICT based farmer organizations,” said National Project Manager, RDALP, Nimal Gunasena. RDALP has been conducting FFS for the farmers in four sectors - seed potato production, vegetable cultivation under the Good Agriculture Practices (GAP) program, home gardening and tea smallholdings. Around 20 farmers participate in an FFS with three or four agriculture extension officers.

After the completion of an FFS, they all join a WhatsApp group to continue to share information related to their crops and get advice or solutions to the issues they face. For instance, one farmer uploads a photo of his crop affected by an unknown pest or disease with description. Other farmers who have the same issue or have experience on the pest or disease add their comments, the name of the disease (if known) solutions and pesticides to be used. If the diagnosis of the farmers is wrong or needs more technical details and remedies, the extension officers will add their comments and recommendations.



The farmers also upload information about their successes, such as an increased harvest because of following a technology learnt at the FFS. They inquire about the availability of seeds or inputs and a farmer in the group who knows the answers helps them out. RDALP has formed 82 WhatsApp groups to date with over 1015 farmers and around 600 officers in the groups.

There is another category of a WhatsApp group called Expert Club, consisting of experts in the sector and the officers who are involved in the FFS groups. There are four Expert Clubs, one for each type of FFS. In addition to field officers, senior officers of technical institutions and researchers have also joined the Expert Clubs. If the extension officer cannot solve or explain an issue faced by farmers under discussion in a farmers WhatsApp group, he forwards the issue to the Expert Club and gets the solution from an expert in the field, to share it to the group.



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