Annex 2

Healthy Landscapes Management

Land Resources Division
Ministry of Mahaweli Development & Environment
Project Planning Workshop

Healthy landscapes: Managing agricultural landscapes in socio-ecologically sensitive areas to promote food security, well-being and ecosystem health in Sri Lanka

Work Book

In collaboration with
UNEP-GEF, Bioversity International

20th September 2019
Auditorium National Agriculture Information Center, Peradeniya

Land Resources Division
Ministry of Mahaweli Development & Environment

CONTENT

Project summary

This Healthy Landscapes project will seek to showcase management strategies for strengthening the restoration and sustainable management of selected Village Tank Cascade Systems (VTCSs) in cascade landscapes for the enhanced provision of ecosystem services and protection of biodiversity. The project plans to develop and validate a model VTCS management system that can be used for scaling up to other cascade landscapes in the country.

The project will deliver global environmental and socio-economic benefits through a package of measures – practices, policies, knowledge management and awareness - that ensure future land use and production sector practices and decisions do not compromise biodiversity and ecosystem functions and recognise the importance of biodiversity, agriculture and health linkages. Measures will include scaling up methods and tools to mobilize agro-biodiversity at the cascade, farm and community level, knowledge management partnerships, capacity building, cross sectoral policies and planning and enhanced awareness and understanding of biodiversity, agriculture and health linkages so as to better manage future risks and safeguard ecosystem functioning while ensuring that social costs, including health impacts, associated with new measures and strategies do not outweigh potential benefits.

The project proposes establishing 3 model eco-health villages in following VTCSs.

Mahakanumulla – Thirappane – Ulagalle triple VTCS complex

PROJECT IDENTIFICATION

Project title:	**Healthy landscapes: Managing agricultural landscapes in socio-ecologically sensitive areas to promote food security, well-being and ecosystem health in Sri Lanka**
GEF SEC Project ID:	9409
GEF agency Project ID:	1407
GEF Focal Area(s):	MULTI- FOCAL AREA
Project type:	MSP
Trust Fund:	GEF
GEF Agency(ies):	UNEP
Geographical scope:	Sri Lanka
Mode of execution:	External
Project Executing Organization:	The Ministry of Mahaweli Development & Environment Sri Lanka, Bioversity International, Rome, Italy.
Duration of project:	36 months

Project Components by Outcome and Outputs

Project components, expected outputs and results

COMPONENT 1: Implementation of biodiversity based options that improve sustainable landscape management in socio-ecological sensitive areas.

Under this component the project will support the development, validation and scaling up of community-based practices and models to renovate VTCS and promote sustainable land management practices that better integrate biodiversity-based options including agrobiodiversity. It will support further development of a model of VTCS restoration, which contributes to enhanced ecosystem services including for human health and well-being. Alternative production approaches to ensuring sufficient production to meet human food and health needs in environmentally safe ways will be broadly based on enhancing the use of biological processes in agriculture in the cascade landscapes. There are a wide range of ecologically based options including conservation agriculture, organic agriculture, agro-ecology, integrated pest management (IPM), and eco-agriculture, many of which have been deployed in areas of Sri Lanka although they are yet to be universally accepted or adopted. Ecological approaches to agricultural intensification make increased use of agricultural biodiversity (including priority food tree and crop species) and are expected to create conditions that will support the maintenance of biodiversity as a whole and improve human nutrition and health, either directly or indirectly. This component will also identify key goods and services from cascade landscapes such as food and medicinal products and handicrafts for which value chains can be developed. This will also include other market-based incentives such as promoting ecotourism. A key element of this component will be the identification and establishment of Sustainable Village Models (SVMs) that will be key locations for implementation of VTCS restoration and scaling up of alternative production approaches as part of sustainable land management for better health and wellbeing.

Output 1.1: *Socio-ecological and biophysical system properties mapped and defined in 2 project landscapes*

While the PPG phase of the project has facilitated the collection of a reasonable amount of secondary data and information, including mapping, as well as some preliminary primary data collection from one project site a major focus during actual project implementation, and of this output, will be an intensive baseline assessment of the current socio-ecological and biophysical context in both project cascade landscape areas. This will be undertaken using a variety of innovative methods and tools employed through both quantitative and qualitative approaches provided by strategic key national and international expert partners. National universities, especially the University of Peradeniya, will provide experts and postgraduate students to help undertake detailed baseline assessments (including gender and human health issues) in both project areas.

Leuphana University offers in-kind support through collaboration in the design and execution of the systems mapping workshops, data collection and analysis, a collaboration which has already begun under an ongoing UNEP/GEF project, the *Biodiversity for Food and Nutrition* project. Mapping exercises will provide a detailed account of the factors and processes that interact with each other to influence food security, human health and wellbeing and ecosystem health (via ecosystem service identification) in cascade landscapes. Often, it is difficult to address successfully human-environment problems because of the complexity of these systems. Major drivers of change in agricultural landscapes such as deforestation, population growth, urbanisation pressure, and input overuse (e.g. fertiliser and pesticides) are well known and often the major focus of interventions to improve outcomes for people and nature. However, the finer details of the system and the interactions between these factors can be poorly understood, leaving major knowledge gaps and in

some cases it can lead to sub-optimal solutions. Mapping systems at the beginning of projects, especially projects that have an intervention component, can increase working knowledge of the system and reduce the likelihood of poorly targeted interventions. It is envisaged that the system mapping exercises in project areas will contribute valuable insights for the detailed planning and implementation of future interventions. Other major benefits of this collaboration would be expected to include the in-kind contribution of expertise by Leuphana University and continued collaboration between their researchers and students on these cascade landscapes in the context of food security, sustainable management, biodiversity and human health. Leuphana University has already collaborated with Bioversity International, University of Peradeniya and Sri Lanka's Department of Agriculture in one such mapping exercise through the UNEP/GEF Biodiversity for Food and Nutrition (BFN) project. Leuphana University bring significant expertise to the project through their initiative, *Social-ecological system properties contributing to food security and biodiversity conservation,* funded by the European Research Council. This will ensure the sharing of knowledge and experiences from similar exercises involving Ethiopia, Indonesia and Burkina Faso.

This socio-ecological system mapping approach will be complemented by the use of the *Indicators of Resilience in Socio-ecological Production Landscapes and Seascapes (SEPLS)* toolkit developed by Bioversity International (formerly International Plant Genetic Resource Institute-IPGRI) and UNU-IAHS in 2012. The toolkit is based on the experiences of field testing these indicators in the 20 UNDP-COMDEKS countries under the GEF Small Grants Programme (GEF-SGP). The indicators assess landscape diversity and ecosystem protection; biodiversity; knowledge and innovation; governance and social equity; and, livelihoods, health and well-being. The toolkit, implemented through assessment and monitoring workshops, allows better engagement of local communities in adaptive management of the landscapes in which they live and to allow them to evaluate current conditions across project landscapes and help identify and reach agreement on priority actions. Adding Sri Lanka to the growing list of countries were the toolkit has already been tested will ensure the sharing of knowledge and experiences with other countries and through relevant global forums.

Output 1.2: *Community familiarization of VTCS restoration and agroecological and sustainable land management strategies and practices*

A programme of community-level awareness on the importance of the tank cascade ecosystem and its management and the rationale for it conservation to maintain the functions, goods and services it provides will be held in project areas. This will include awareness of the various components of the tank ecosystem and how these interact as a system and the ongoing threats and challenges facing maintenance and management of the cascade ecosystem including challenges in: agricultural productivity, resilience and profitability; challenges of access to agricultural land; general appreciation of the value of maintenance of VTCS, its biodiversity and associated ethnobiology and other knowledge systems; its contribution to food and livelihood security; cultural value systems; and the importance of social organization for their ongoing sustainable management in light of ongoing socio-economic and biophysical change. This programme will be supported by the preparation of appropriate community-level targeted awareness and training materials using print and other media and will include the collection of testimonials from various individuals and groups living and working in cascade landscapes. Awareness of the need to maintain VTCS in proper working order and to promote agroecological and sustainable land management practices as part of this will be complemented with ongoing support to community-level training on VTCS restoration processes, planning and management.

Output 1.3: *Physical and ecological components of selected VTCSs restored as pilot models*

Creating familiarization and awareness of the importance of the cascade tank ecosystem and its conservation is an important first step in VTCS restoration. An ecosystem functions as a unit to provide a range of ecosystem services that is extremely beneficial to humans. A village tank cascade is a centuries-old ecosystem that has provided villagers living in its surrounds with a suite of life sustaining ecosystem services for their daily needs — such as food, medicines and fuelwood; absorption of carbon; purification of water; control of erosion; and stabilization of stream banks. However as highlighted elsewhere, a range of human-induced activities — such as deforestation, overexploitation, pollution, and the spread of invasive alien species — has degraded many of the traditionally rich village tank cascade systems. This has created an urgent need, therefore, to rehabilitate these tanks and restore the cascade ecosystems to ensure that the historical benefits that the community have enjoyed and depend upon continue, and that such systems are in proper functioning order to deal with future changes including that of climate. The purpose of this output is carrying out VTCS restoration, with the involvement from the community throughout. To this end, elements of each tank as outlined in the project work plan will be evaluated and required actions taken to rehabilitate and restore these elements where needed. A series of *shramadana* programmes promoting tree planting and afforestation and herbal gardens, and planting of other socio-economically important plants, as an element of restoration will be carried out in both project landscapes. A key element of this will be sub-activities to conduct a survey of plants with potential bioremediation characteristics to remove toxic heavy metals and improve water quality. Other restoration elements will include partial desilting, strengthening upstream earthen ridges, tank bund repair, and maintenance of common drainage canals in the various components of the VTCS.

Output 1.4: *Biodiversity-based agroecological and sustainable land management practices adopted in the two selected VTCS pilot schemes*

This output will promote the implementation of sustainable biodiversity-rich production practices and integrated, ecologically sensitive land management approaches in project landscapes through mainstreaming of agrobiodiversity conservation and sustainable land management concepts and greater understanding and awareness of biodiverisity, agriculture and health linkages. Thereby protecting globally and nationally significant biodiversity, reducing resource and human-wildlife conflicts, reducing chemical pollution and maintaining a continuous flow of ecosystem services including water and soil quality, quality food for healthy diets and good nutrition, and medicinal plants for human health and wellbeing. At the farm and community level the project proposes establishing at least 2 ‘Sustainable Village’ models employing appropriate methods and tools which comprise the Community Biodiversity Management (CBM) approach and toolkit developed by International Plant Genetic Resource Institute-IPGRI (now called Bioversity International) and partners to better integrate people, agrobiodiversity and food production systems and which encourages the custodianship of land and agrobiodiversity as a means for improving the livelihoods and health of local communities and which simultaneously maintains important genetic resources and supports evolutionary processes. The output proposes a series of activities that support efforts around three core challenges in cascade landscapes at the present time: the escalation in human-animal conflicts; the human health and pollution problems arising from excessive agrochemical use; and the need to improve the availability of food diversity and improve dietary diversity and nutrition. The output will explore sustainable land management practices that can help convert degraded forest (after *chena* cultivation) in the vicinity of villages to discourage elephant movements, the identification of sustainable trees and live fences to control elephant movements and the improvement of water sources in forests and the establishment of forest patches with food for wildlife and to discourage movements. The output will also explore the options for shifting rice cultivation to incorporate more traditional and sustainable practices including the integration of traditional rice varieties. The UNEP/FAO/GEF BFN project in Sri Lanka has already identified the nutritional value of many traditional varieties of paddy as well as many other underutilized, nutrient-rich crops, varieties and

landraces. These, and other crop varieties and landraces with medicinal values, and their consumption will be actively promoted as part of this output. As well as the identification and promotion of agroecological and organic methods to reduce excessive agrochemical inputs this will be complemented with communication strategies to encourage more efficient and safe use of chemicals and the options through IPM to use biofertilizer and biopesticide. Efforts will also include the identification of suitable green and organic manures, leguminous cover crops and biomass options for renewable energy and the potential for establishing agro-based small scale industries to supply these services.

Output 1.5: *Goods, services and functions of VTCS identified and mainstreamed*

The range of goods and services available within cascade landscapes is quite astonishing and people have unsurprisingly exploited these for their multiple food and non-food needs over many centuries. The purpose of this output is to find ways of adding value to these cascade landscape goods and services in order to enrich the livelihoods of those living there. The forest is an integral part of villagers' livelihood strategies. A number of non-timber forest products are in common use. The most important of these are medicinal products, fuel wood, bee honey, some food products, fibers, and wild game (mainly wild boar). Women have the tradition of weaving mats, bags, hats etc. from raw materials, especially reeds, collected from village commons in cascade landscapes and these could provide the basis for much needed gender-sensitive value chains for prioritized cottage-based industries and handicrafts based on VTCS products. Reeds used are *Gallaha, Havan, Vetakeiya, Borupang, Thunhiriya* which grow in wetlands found around the tanks and the paddy fields. Of these, *Gallaha* is the most expensive. Leaves of Palmyra tress and *Vetakeiya* are also used. Other, common traditional crafts of VTCS include handicrafts made out of reeds, other cured leaves of palm trees, and rattan, wood carving, rock carving, and pottery. There are a variety of produce such as mats, hats, handbags and purse made out of reeds and cured palm leaves. Wood carvings include statues of religious leaders, images of various animals, various sceneries and ornaments. Similarly, rock carvings and pottery also include articles of ornamental value. Cascade landscapes, agricultural lands, *chena* and home gardens and forest areas also provide a rich diversity of food and medicinal plants. A recent study in the Palugaswewa cascade has shown that in the *kattakaduwa*, the tank bund, and the tree belt alone there are 226 plant species belonging to 51 families. These plants species include fruit, timber, medicinal, ornamental and forage trees. Many species are found in more than one ecological segment showing their adaptability to different ecological conditions. Within paddy lands farmers continue to cultivate some traditional rice varieties. *Chena* lands are used for growing other coarse grains, pulses, yams, spices and vegetables. Some of the traditional practices such as plant protection, moisture conservation, mixed cropping etc. are still taking place in these lands. Perennial fruit and timber trees, medicinal and underutilized plants mostly occupy the home gardens. Beli (*Aegle marmelos*), wood apple, orange, banana, jak, and mango are the common fruit trees while teak is the dominant timber tree species. The coconut tree is also very common in all home gardens. The home gardens supply most of the wood, firewood and other forest products for the district (in fact a substantive portion of forest products in Sri Lanka come mostly from the home gardens). Fruits produced are used for family consumption and excess if any, are sold. This rich biodiversity has contributed to an equally rich and vibrant culture of traditional foods and food habits, which with support from the project could tap into the current interest in the nutrition and healthful nature of traditional foods, especially with the support of the ongoing UNEP/FAO/GEF BFN project. There is much opportunity to link these traditional foods to the ever-growing network of *Hela Bojun* food outlets in the country, as well as capitalizing on growing interest in food tourism and food festivals. These cascade landscapes are also located close to various tourist attraction sites which provide the opportunity to link the project landscapes to eco-tourism activities that could include food and medicinal tourism (both growing rapidly worldwide), food and medicinal festivals and food fairs but also other simpler experiences such as travelling on bullock carts as a novel experience for the tourist, boating in the tanks is also enjoyable service that can be rendered by the

villagers, and of course the tourists are given the chance of experiencing and tasting local food preparations. All these elements offer considerable opportunities to develop income generating avenues for villagers in cascade landscapes. In some cases added value can be explored through exploring current developments in certification and labelling related to sustainability, health or other value of products or their association with a particular landscape or sustainable landscape. There is also the option for local schools and health centres to be provided with healthy and nutritious local foods. Further, possibilities for the establishment of Rural Market Centres (*kada pila*) in project landscapes offer additional opportunities for income generation.

Output 1.6: *Cost-benefit aspects of the restoration of VTCS monitored and analyzed using economic methodologies*

There is little known about the costs and rates of return in relation to the restoration of cascade landscapes in Sri Lanka, a situation that the project plans to address through this output. Accounting for the impacts of restoration activities in project targeted cascade landscapes will provide an opportunity to determine when approaches and models warrant investments by governments, donors, and stakeholders, including local communities, and when they do not have preliminary analysis offers an opportunity to adjust restoration models so that governments see restoration as an investible opportunity. There are a number of currently available cost-benefit frameworks for accounting for the ecosystem services and economic impacts of restoration activities though not specifically for VTCS. These will be reviewed for their application in VTCS with relevant experts in Sri Lanka. The project will also work with IUCN-Sri Lanka on establishing the cost-benefits of cascade landscape restoration using a framework tool they have developed for such analyses in the context of forest landscape restoration.

COMPONENT 2: Strengthened institutions, policies and integrated landscape planning of village tank cascade systems (VTCS) in socio-ecological sensitive areas

Achieving long-term economic, environmental and social goals increasingly depends on understanding and accounting for the impact of land management decisions on ecosystem goods and services, and developing a more coordinated approach to natural resource management on a larger scale. The outputs and activities under this component will contribute to a more effective enabling environment, including capacity and policies, for more effective cross-sectoral coordination and cascade landscape planning which helps restore and manage the multi-functional nature and functions of VTCS, supports more resilient and productive farm and agricultural landscapes, a variety of sustainable land management practices and strategies and local healthy food systems, and which collectively reduces risks and enhances human health and well-being. The foundation for this will be the multi-stakeholder participatory integrated landscape management planning approach. While multiple diversity benefits have been identified (such as alternatives to the use of pesticides or of reducing the pollination deficit through improved pollinator diversity), there remain economic, policy and other barriers to the adoption of such practices, especially at the national level, including consideration of the multiple benefits to health and other sectors. These need to be identified and alternatives adopted and mechanisms and incentives articulated that would facilitate behavioural change among stakeholders (biodiversity, agriculture, health) to adopt approaches that ensure the sustainable provision of ecosystem services within cascade landscapes while meeting the requirements in terms of food security, health-related objectives and also sustainable livelihoods and well-being. Key catalysts, in addition to better institutional and governance mechanisms already mentioned, that might facilitate better integrated landscape management planning and needed behavioural change to adopt such approaches could also include a range of market and non-market and financial mechanisms and incentives. Outputs will include innovative planning platforms and strengthened policies to better mainstream biodiversity into sustainable land and forest management in

cascade landscapes as well as policies and institutions that better support alternative production approaches and participatory land management plans. The project will also build on and disseminate the tools and guidelines for sustainable land management which have been produced by former GEF projects and through the assistance of other organizations and agencies in Sri Lanka. The added value of doing this in the current project proposal is that health and well-being aspects will be mainstreamed into such tools and guidelines.

Output 2.1: *Awareness raising and capacity building of key partner institutions, local organizations and communities in participatory integrated landscape management planning of VTCS for improved ecohealth outcomes*

Awareness raising on the importance and rationale for integrated landscape management planning and action is important to ensure that all stakeholders and actors are on board. For different interest groups to come together in a multi-stakeholder process involving compromise and trade-offs, requires a clear articulation of the benefits of participation. Furthermore, less powerful and marginalized actors (farmers, women, youth and unorganized groups) need to be empowered to meaningfully participate in the process if it is to be effective. In addition to creating awareness, strategic capacity building and training of key stakeholders is necessary for them to adopt an integrative perspective, looking beyond the forest and agricultural or other sectoral boundaries, taking into account cross-sectoral concerns and working in multi-disciplinary teams. Such training will focus on the development of new institutional arrangements at the cascade landscape level, including multi-stakeholder platforms and networks, and financial support mechanisms to support more effective integrated landscape management. This output will undertake such awareness raising and capacity building in the context of improved integrated cascade landscape planning for multiple goals including human health and well-being.

Output 2.2: *Relevant national policies and legislation for enabling environment for the sustainable integrated landscape management reviewed and revisions recommended to the Government*

There a vast array of institutions and policies pertaining water and natural resources and landscape management in the dry zone region of Sri Lanka, from national to district levels. In the past, each of these institutions have largely pursued their own mandates, resulting in overexploitation of these resources. In terms of water resource management alone, 28 agencies across 10 ministries have been identified as having one or more responsibilities making effective policy and legislation difficult. This situation demands that new institutional frameworks or platforms at the cascade landscape level are required which can provide effective guidance on the development of much needed policy and legislation revisions that would help address issues of: laws, by-laws, regulations and so forth pertaining to sustainable management of water and land in cascade landscapes; and, resolution of disputes among water and land users in cascade landscapes. Such activities will be the basis of this output.

Output 2.3: *Participatory sustainable integrated landscape management planning platforms developed at district and local level*

There have been many recent developments in integrated landscape management approaches - and the production of corresponding frameworks, resources and tools - that have made it easier to work at landscape scale. A number of global and national policy developments are also making integrated landscape management more feasible. Multi-stakeholder processes are a key element in any successful integrated landscape management approach. There is increasing experience with and recognition of the benefits, of

multi-stakeholder participation in land use policy in many countries, with non-governmental actors and the private sector becoming key players in decision-making processes. As part of the design and implementation of REDD+, many countries have been undertaking multi-stakeholder processes. International commitments to the SDGs and other commitments under climate change also call for and require multi-stakeholder processes, as do The Bonn challenge and The New York Declaration on Forests. Furthermore, many developing countries around the world are also taking steps to decentralise some aspects of their natural resource management, meaning the central government formally transferring planning, decision-making and management powers to sub-national or local institutions. Although it is challenging, decentralisation in general and of natural resource management in particular, can help create the institutional basis for more participatory and effective natural resource management. It can therefore provide a significant boost to efforts at managing natural resources in a more integrated manner and at a landscape scale. The goal of this output is to explore appropriate options for effective multi-stakeholder processes for the enhanced management of cascade landscapes. It will look at what the current constraints are to establishing such platforms and the reasons for past failures and successes in terms of water and land management nationally and try to build on past initiatives and recommendations to put in place a relevant and workable multi-stakeholder process.

Output 2.4: *Participatory sustainable integrated landscape management planning guidelines developed for VTCS in socio-ecological sensitive areas*

One of the key outputs of the multi-stakeholder integrated landscape management platform will be the development of policy and technical guidelines for the sustainable cascade landscapes. Such guidelines will incorporate and address a number of elements including: a sustainable cascade landscape vision into strategies and policies; guidance on harmonizing relevant sectoral plans to incorporate multiple goals of sustainable cascade landscapes; how to empower civil society in building effective cascade landscape partnerships; the recognition of land and resource rights and responsibilities negotiated at the cascade landscape scale; development of a regulatory framework that enables collaborative cascade landscape action; mechanisms to incentivize integrated cascade landscape investments through policy and public finance; and, efforts to build the knowledge and technical capacity to implement integrated cascade land management in Sri Lanka.

COMPONENT 3: Knowledge management, partnerships and capacity building for better sustainable integrated landscape management in support of improved ecosystem services and ecohealth outcomes

One of the key constraints to the more effective management and conservation of cascade landscapes in Sri Lanka is the lack of understanding at many different levels of how they function as a system and the important role they play through the provision of goods, services and functions and their role in management and adaptation to future environmental change. This lack of understanding is manifested in many ways, as a general lack of awareness from the policy maker to the villager, but also as a major gap in the general knowledge base available in Sri Lanka through the limited appreciation of ‘cascade ecology’ as a concept and a coordinated body of experts and practitioners who might better promote and implement this concept. There is also a much too limited availability of knowledge products and tools on the topic. Which means there is a lack of sufficient knowledge, capacity and partnerships nationally to address these issues in the holistic manner that is needed The outputs of this component will contribute greatly to the assessment and mapping of these knowledge, capacity and partnership gaps and our understanding of biodiversity, sustainable land management and health linkages in cascade landscapes. Such knowledge and products will be mainstreamed into relevant education institutions. The outputs of this component will also contribute to

better multi-sectoral knowledge sharing platforms, communities of practice and enhanced integrated knowledge management systems, which will include detailed information on integrated cascade landscape management and sustainable practices and stronger statistical data on cascade ecosystem degradation and its health and well-being impacts (nutrition, diseases, human-wildlife conflicts etc). The component will also apply the ecosystems services valuation framework as a tool in cascade landscapes but with an emphasis on the value of ecosystem services for human health and well-being.

Output 3.1: *Knowledge enhancement mainstreamed to national extension, research institutions, including universities, and policy makers on cascade ecology and landscape management, ecosystem services and ecohealth approaches*

A key step in raising understanding and awareness of the importance of cascade landscapes, promoting sustainable resource use and conservation, and the need for more holistic approaches in their management is make sure that the relevant knowledge, information, resources and tools are incorporated into relevant teaching and curricula materials in education institutions particularly universities. This also includes the better incorporation of more holistic approaches to ecosystem health and human health such as teaching and research on ecohealth and planetary health. This will be a key focus of this output and the project will work closely with relevant universities to address these challenges. The project will also identify relevant international institutions who might assist in such mainstreaming and capacity building on ecohealth and planetary health including the Planetary Health Alliance and the planetary health discipline newly established at the University of Sydney. Many of the knowledge products and information materials developed in other outputs of this component will support activities in this output. Finally, these new courses, resources and tools will also be employed to raise awareness and train other relevant actors (extension and research staff, policy makers) on the importance of cascade ecology, ecohealth and planetary health.

Output 3.2: *Concept of Cascade Ecology established through workshops, symposia and other knowledge products*

This output will address one of the major fundamental constraints facing the more sustainable management of cascade landscapes namely the disparate nature of knowledge and information and the various 'experts' with experience in the field. This means that much of the current knowledge on cascade landscapes is not widely available, buried in grey literature and reports, or exclusively in peer-reviewed publications. Many of the experts in the field are also often working in isolation, different sectors or institutions or even retired. There is therefore an urgent need to address those critical issues. One key area of opportunity for the project is to develop the idea of cascade ecology as a concept which could be formally recognized in the country and also be incorporated into relevant education establishments. Therefore, it is the goal of this particular output to begin efforts by bringing together relevant experts and those with an interest in cascade landscapes to establish a community of practice (CoP). It is anticipated to use this CoP to review and consolidate already existing knowledge on 'cascade ecology' and cascade landscape management as the basis for a couple of activities. Firstly, to call for a national cascade ecology symposium to include a range of sessions on various elements and themes, and to invite national and international participants to the event. Secondly, using this already existing knowledge, the symposium outputs and findings from the new GEF project, a text book on cascade ecology will be proposed to a reputable international publisher. Thirdly, all these information and knowledge products will be made available to the wider public including through the establishment of a web-based knowledge portal which will be used for all planned ongoing awareness-raising and training events planned within the framework of this project.

Output 3.3: *Knowledge base on good practices, technical guidelines and policy recommendations on cascade landscape management, ecosystem services and ecohealth established*

Other outputs packaged in component 3, as well as other outputs in other components, will contribute significantly to the generation of new information, data and knowledge. It will be the purpose of this output to review this new knowledge and find effective and innovative ways to package it and make it available to multiple end-users. This will include: developing and publishing good practices for cascade landscape restoration and management, sustainable land management practices and ecohealth approaches; developing training manuals that support the design and implementation of cascade landscape restoration and management and sustainable land management practices for better ecohealth outcomes; publishing technical bulletins for specific elements of cascade landscape restoration and sustainable land management; and, developing policy briefs to promote and support cascade landscape restoration and management.

Output 3.4: *Cascade ecosystem health and services, including human health factors, identified and valued*

The framework of ecosystem services has been designed to evaluate the benefits that people derive from ecosystem products and processes. However, despite having been around for some time, efforts to date to integrate human health and well-being outcomes into ecosystem services assessments have been very limited. The ecosystem services framework provides a compelling vehicle for integrating the many factors that influence the human health response to global change, as well as for integrating health impacts into broader analyses of the impacts of this change such as on adaptation and resilience, food security and nutrition. Limited efforts to pursue this has meant that despite the clear role that ecosystems and biodiversity play in human health, these links are not being made in policy forums. The current increasing attention to the importance of biodiversity and human health, Ecohealth and planetary health approaches provides an opportunity to address this gap. Integrating multiple human health and well-being impacts into ecosystem services assessments will be a key focus of this output, and will be a crucial step in quantifying the impact of change in cascade landscapes on human health and wellbeing

COMPONENT 4: Knowledge, information management and monitoring and evaluation

The outputs of this component will contribute to better knowledge sharing and enhanced integrated knowledge management systems which will include detailed information on sustainable practices and stronger statistical data on cascade landscape degradation and its health impacts (nutrition, diseases, human-wildlife conflicts etc). Monitoring systems to assess progress made in reaching the multiple objectives (e.g. environmental, agricultural and food, social and health) of integrated cascade landscape management will be put in place which also track anticipated (and unanticipated) synergies and trade-offs between different goals. The project will put in place a gender-sensitive monitoring and evaluation systems that will also track the benefits arising to women‟s groups and other impacts. Such ongoing evaluations and assessments will also help inform Sri Lanka‟s progress and contribution to global commitments including the Aichi Targets and SDGs.

OUTCOME 4**: Project implementation based on results based management and application of project lessons learned in future operations facilitated**

Output 4.1: Gender sensitive project monitoring system operating and providing systematic information on progress in reaching expected outcomes and targets. The project will put in place a comprehensive gender-sensitive monitoring and evaluation system which will ensure timely delivery of project outcomes and targets and provide systematic information on project progress.

Output 4.2: Project-related best practices, knowledge products and lessons learned systematized and published for a variety of audiences and stakeholder groups. It is the purpose of this output to review new knowledge information and data arising from the project and find effective and innovative ways to package it and make it available to multiple end-users. To this end the project will: develop and publish a series of good practices for cascade landscape restoration and management, sustainable land management practices, agroecology and ecohealth approaches; develop training manuals that support the design and implementation of cascade landscape restoration and management and sustainable land management practices for better ecohealth outcomes; publish technical bulletins for specific elements of cascade landscape restoration and sustainable land management; and, develop policy briefs to promote and support cascade landscape restoration and management.

Working with the National Agricultural Information and Communication Centre, the project will support the development and implementation of a national public education and awareness programme on sustainable cascade landscape management in order to:

 Upscale the lessons learned and the implementation of good agroecology and SLM practices to a national scale to tackle current unsustainable practices;

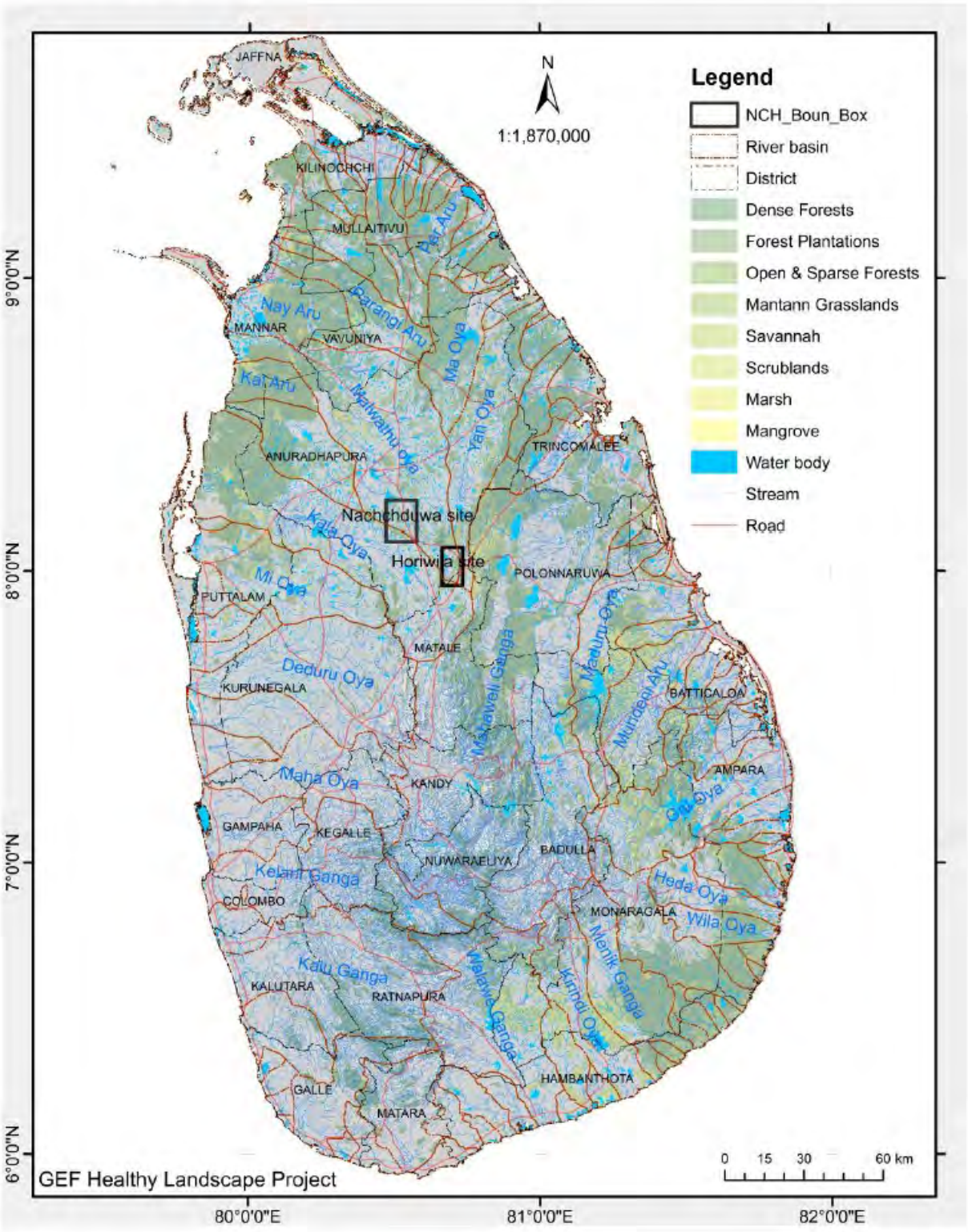
 Increase public support for tackling the challenge VTCS neglect and mismanagement;

 Inform national stakeholders of the need for new institution arrangements and models for better cascade landscape management;

 Increase awareness about cascade landscape ecosystem services, including for human health, and watershed conservation issues.

Selected Ecosystems

Location map of project pilot sites

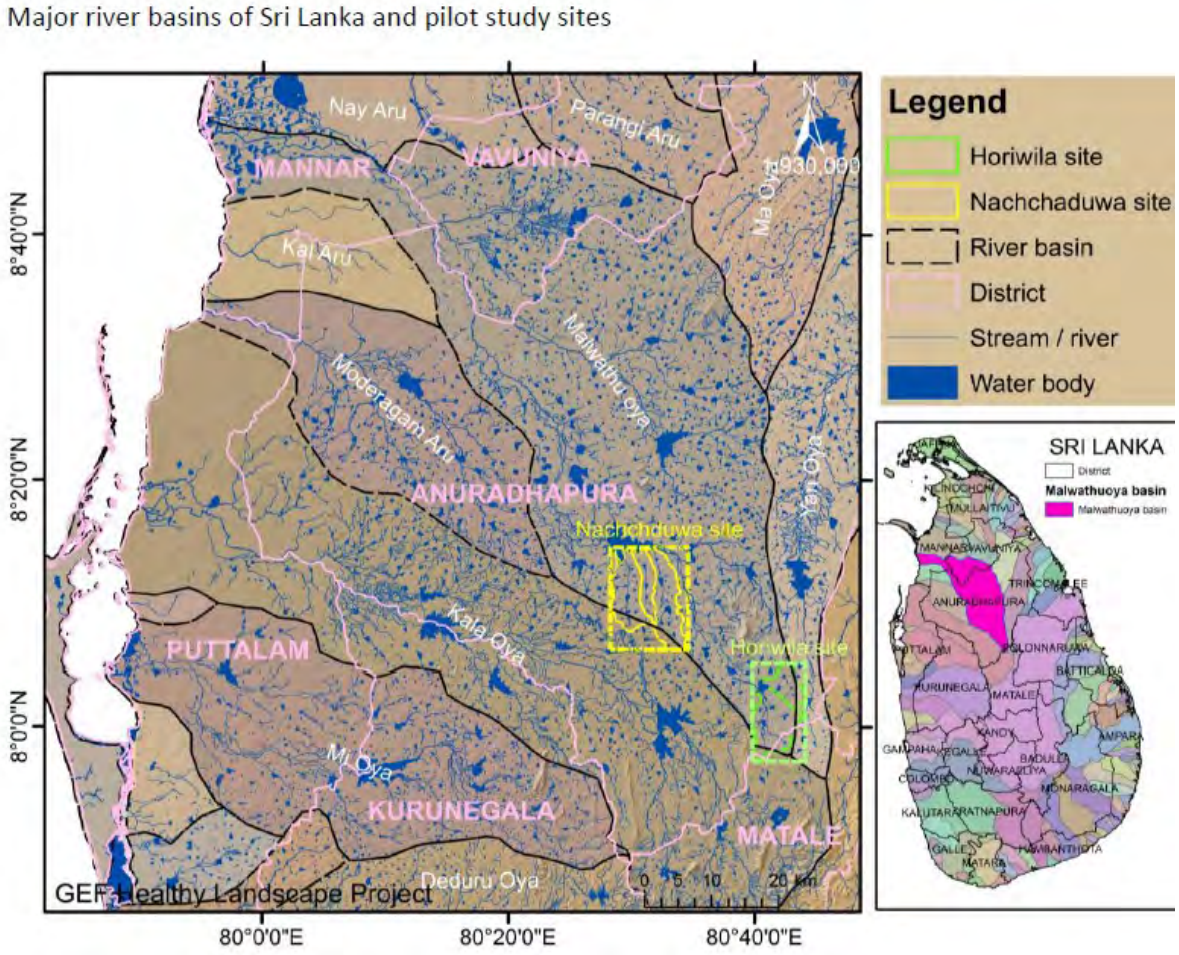


Site Selection Criteria

	Criteria
01	Representative ness of cascade systems in Sri Lanka
02	Accessibility to cascade system and availability of necessary baseline data
03	Size, farming and socio-economic status of cascade (this includes catchment and feeding area, number of householders living and their socio-economic status, agriculture as main occupation and lack of interests of youth in agriculture, declining agricultural productivity and profitability, weak resilience of the system, available forest area and their status including deforestation and forest degradation, status of land use pattern in catchment and feeding area, changes of all these during the last 20 years, farming system, crops and cropping patterns).
04	Vulnerability of the present system
05	Information on ongoing and past cascade rehabilitation and socio-economic support related project activities
06	Diversity of land and water management options and their changes during the last 20 years
07	Occurrence of human and land health problems in the cascade system (i.e. CKDu, excessive agrochemical uses, human-wild animal conflicts,
08	Availability of climatic, soil, socio-economic and catchment data at present and changes during the last 20 years
09	Link to other national activities (i.e. GIAHS etc.)

Pilot Project Sites

As mentioned above, adjoining three cascade systems drained from right bank to the Nachchaduwa reservoir and all the area (2 cascade systems) drain to Horiwila reservoir were selected as pilot project areas. Selected pilot site at Nachchaduwa include three tank cascade systems (Mahakanumulla, Thirappane and Ulagalle) covering 12,000ha in 4 divisional secretariat divisions (Ipalogama, Thirappane, Ipalogama and Kekirawa) and consisted with 67 different types of tanks. Pilot site at Palugaswewa covers 7016 ha in Palugaswewa and Dambulla DS divisions with two cascade systems (Palugaswewa and Bellankadawala) 42 different types of tanks (Table 2). Both the pilot sites cover a total area of 19067 ha and 109 different types of tanks



Major Reservoir	Tank cascade system	DS Divisions	No. of tanks	Extent (ha)
Nachchaduwa	Mahakanumulla	Ipalogama, Thirappane	29	4717
	Thirappane	Thirappane, Ipalogama, Kekirawa	10	2206
	Ulagalle	Thirappane, Kekirawa	28	5127

Topography and landscape

Both sites belong to Malwathuoya river basin which starts from north part of Matale district and spread over the middle part of the Anuradhapura and southern part of Vavuniya districts (figure 12). The Malwathu oya river basin is surrounded by Yan oya and Kala oya river basins at upper section; Me oya, Parangi aru and Kal aru at middle section and Ny ary and Kal aru from lower sections. Rolling, undulating and flat terrain topography is prominent in this region.

Soil types

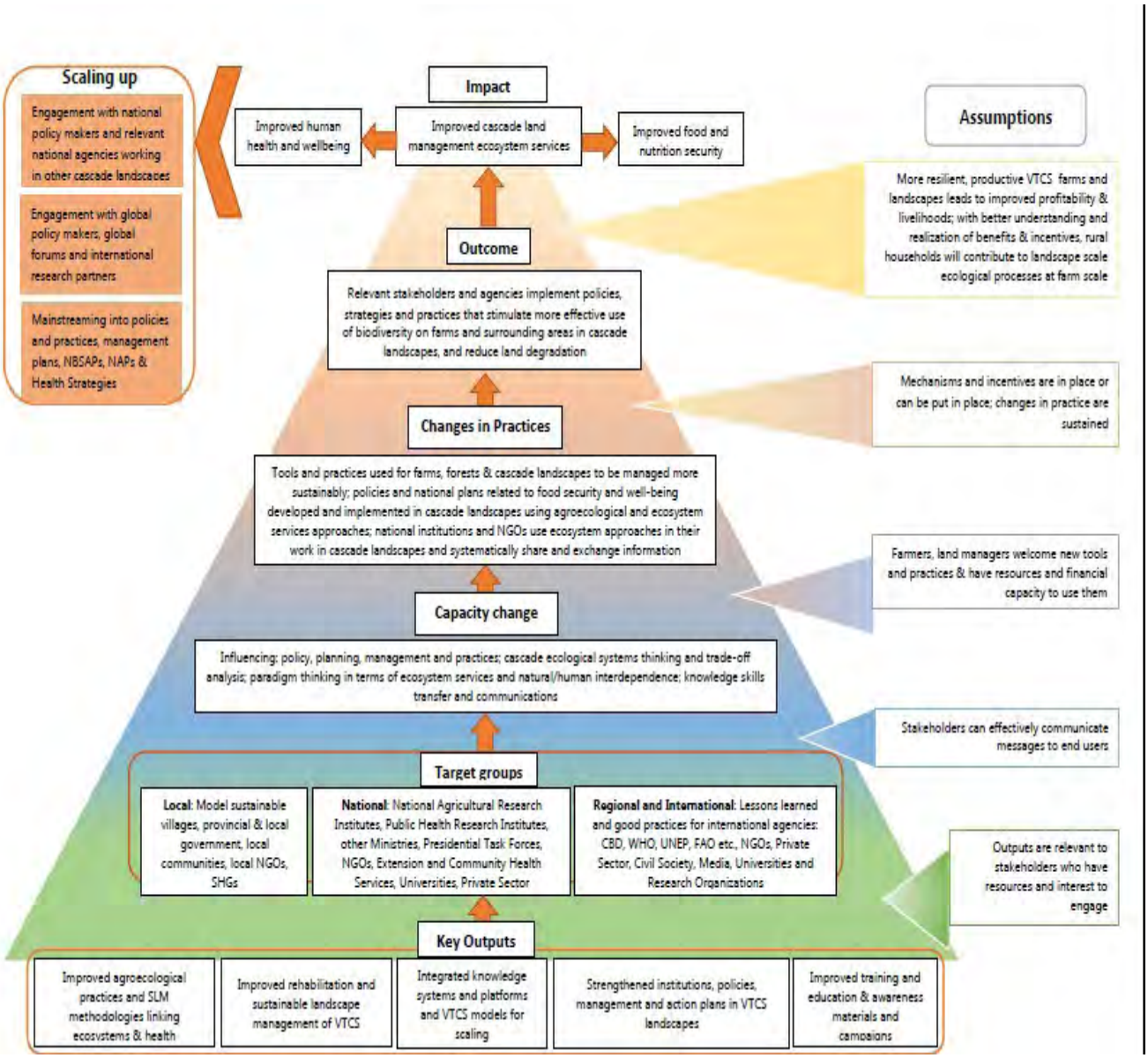
The soils occur in a catenary sequence with the well-drained reddish-brown earths on the upper and mid-slopes of the undulating terrain, and the poorly drained low humic gley soils in the lower slopes and valley bottoms. More than 50 percent of the total irrigated lands of the dry zone are situated in this region, and the command areas of most irrigation schemes are predominantly low humicgley soils. Similarly, more than 60 percent of the rainfed as well as the chena lands of the dry zone are situated on the reddish-brown earths of this region.

Agro-ecology and Climate

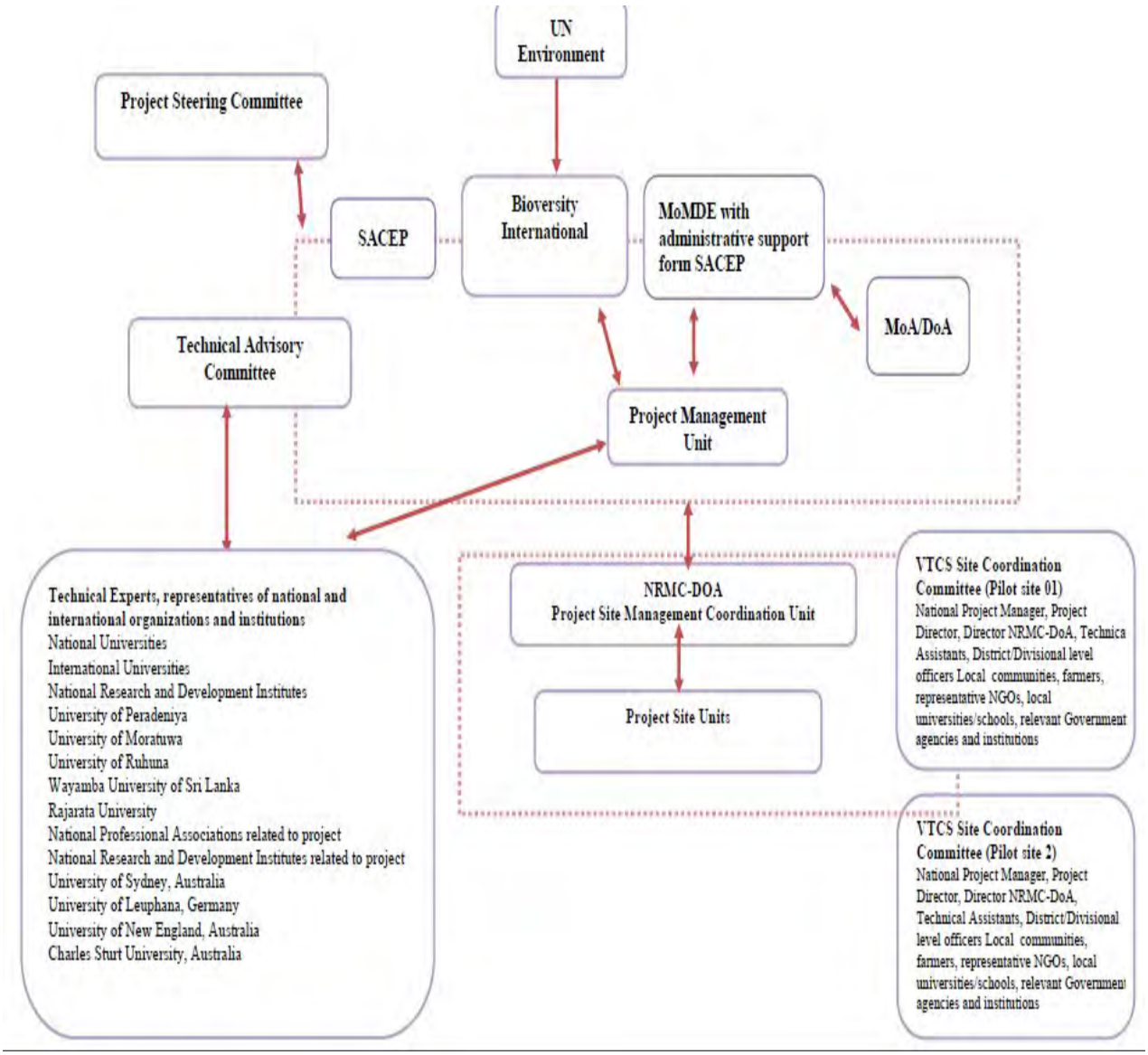
The region belongs to DL1a Agro ecological zone Rainfall variability in amount, duration, and onset of season is a pronounced feature of this region. There is more rainfall in the Maha season (September - January) than in the Yala season (February - August) in the study area. This climate is considered to be As according to the Köppen-Geiger climate classification. The average annual temperature is 26.7 °C. Precipitation here averages 1500 mm. May is the warmest month of the year (28.2 °C) and January has the lowest average temperature (24.5 °C) of the year. Normally, the driest month is June, with 9 mm of rain and with an average of 301 mm, the most precipitation falls in December. There is a difference of 292 mm of precipitation between the driest and wettest months. During the year, the average temperatures vary by 3.7 °C. But much deviations of climate have been recorded during recent years.

.

Project Action Framework



Institutional frame Work



Role of Key Stakeholders

Stake holder	Role in the Project
Ministry of Mahaweli Development and Environment (MMDE) Mahaweli Authority of Sri Lanka Forest Department Central Environment Authority	The Ministry will be the national Executing Agency for the project and its four divisions of Biodiversity, NRM, Climate change and Sustainable Environment will support the project since their mandate is directly related to project objectives. The Ministry will coordinate the inputs of government agencies and other stakeholders in strengthening the legal, policy and institutional capacity necessary for the implementation of the project. MASL will provide strategic guidance on institutional and policy arrangements in project landscapes and nationally The Forest Department will provide technical backstopping and support on issues of degradation in forest and catchment areas in project landscapes. The Central Environmental Authority will provide regulatory support on issues of managing waste and control chemical pollution in VTCS
Ministry of Agriculture Department of Agriculture (DOA) Plant genetic Resources Centre (PGRC) Natural Resources Management Centre (NRMC) National Agriculture Information and Communication Centre Department of Agrarian Development (DAD)	The role of these Ministry and DOA agencies will be in the forefront of supporting actions across all components of the project. In particular, the DOA will play a lead role in the identification of a package of agro ecological and SLM practices for implementation in both project landscapes. They will also facilitate capacity building and awareness raising on agro ecological and SLM. The PGRC will play an important role in linking project landscapes to genetic resources in their gene bank and mainstreaming agricultural biodiversity and promoting conservation and sustainable use

	The DOA will also provide guidance on the development of relevant value chains; policy and institutional arrangements and sustainable landscape management
	The NRMC will establish and host Project Site Coordination Units (PSCUs) which will assist the Project Management Unit in coordination of project implementation at the site level in collaboration with provincial department of agriculture, provincial agrarian services department, and district administration setup. PSCU will function under the guidance of the Project Management Unit (PMU). The PSCUs will consist of the Project Field Coordinator (PFC), and Assistant Field Coordinators (on seconded basis). The role of the NRMC will be key in supporting all project components. The Department of Agrarian Development (DAD) will be a key executing partner of the project and will support the formulation and timely implementation of institutional arrangements, facilitating institutional processes, legal and management services for optimum productivity of all agriculture lands in project landscapes, as well as sustainable development of farming communities.
Ministry of Health, Nutrition and Indigenous (MHNIM) Department of Ayurveda /Department of Health Environmental Health, Occupational Health and Food Safety Directorate Medicine	The MHNIM will provide support to the implementation of the project and ongoing technical support and guidance on environmental health issues. BMARI will provide technical guidance to the project on the restoration of project landscapes and the establishment of medicinal plants, as well as issues related to value chain development and access and benefit sharing
Ministry of Sustainable Development and Wildlife Department of Wildlife Conservation (DWC)	The Ministry will provide important guidance and support to the project on the Implementation and monitoring of Sustainable

Sustainable Development Secretariat	Development Goals in relation to VTCS, and monitoring and evaluation. DWC will be responsible for activities related to management and mitigation of wild animal conflicts at project sites. The Sustainable Development Secretariat will provide guidance on national sustainable development policy and ensure key lessons and experiences from project landscapes are promoted nationally.
Ministry of Land and Land Development Land Use Policy Planning Department (LUPPD)	LUPPD will assist the project in preparation of land use plans at cascade landscape level and also in guidance to the development of project level institutional and policy arrangements in relation to national land use policy.
Ministry of Irrigation and Water Resources	The Ministry will be a key collaborating partner during the implementation of the project.
Department of Irrigation (DOI) Water Resources Board (WRB)	Representatives of the Ministry will take part in ongoing project consultations, workshops and seminars. The Department of Irrigation is currently implementing donor-funded water resources expansion projects in areas where the project will be implemented and will be a key member of project steering committees. The Water Resources Board will provide guidance to the project on developing water resources to meet current demand in project landscapes. The work the WRB is carrying out water quality studies in CKDu-prevailing areas - a key human health parameter of the new project will also be integrated into the project. In addition, the WRB will provide guidance on undertaking ground water monitoring and assessment studies in project landscapes.
Ministry of Social Empowerment Welfare and Kandyan Heritage	The Department of Divineguma Development will play an important role in linking its

Department of Divineguma Development	relevant development programmes e.g. livelihoods development, social development, CBOs, training and capacity, media and marketing, in the relevant districts where project activities will be implemented.
Ministry of Provincial Councils and Local Governments (Provincial Governments)	The relevant provincial and local authorities will be key partners in the implementation and management of the project at the provincial and district level and will play a key role in mobilizing provincial, level groups and local organizations. Representatives of relevant provincial and local authorities will take part in project consultations, project-site level committees, workshops and seminars. Relevant provincial and local authorities will provide advice and suggestions for the project management and implementation of in project landscapes. Relevant provincial and local authorities will participate in capacity building, policy and awareness related campaigns Relevant provincial and local authorities will play an important role in coordination and governance arrangements, development of management plans and guidelines, spatial planning in cascade landscapes, supporting local initiatives, raising local awareness rising on VTCS restoration, cascade ecology and ecohealth
Ministry of Public Administration and Management (District Administration) District Secretaries Divisional Secretaries Grama Niladharies (GNs)	The relevant district authorities will be key partners in the implementation and management of the project at the district level and will play a key role in mobilizing individuals, community groups and local organizations. Representatives of relevant district level authorities will take part in project consultations, project-site level committees, workshops and seminars.
Ministry of Disaster Management Ministry of Home Affairs	Representatives of these additional different National Government Ministries will take part

Ministry of Livestock and Rural Community Development Ministry of Tourism Development and Christian Religious Affairs Ministry of Women and Child Affairs Ministry of Education and Cultural Affairs Ministry of Industry and Commerce Ministry of Fisheries and Aquatic Resources Development	in ongoing project consultations, project steering committee meetings, workshops and seminars. They will provide guidance, advice and suggestions, where relevant and from the perspective of their mandate, for project management and implementation of cascade landscape SLM activities and tank restoration initiatives as well as relevant institutional and governance issues.
Prevention of Chronic Kidney Disease Task Force National Food Production Programme Punarudaya Environmental Conservation Programme	Representatives of relevant Presidential Task Forces will take part in ongoing project consultations, project steering committee meetings, workshops and seminars. They will provide guidance, advice and suggestions, where relevant and from the perspective of their mandate, for project management and implementation of cascade landscape. They will use their position of influence to raise important issues related to VTCS at the Presidential Secretariat level.
Faculty of Agriculture and Technology of the University of Peradeniya, Faculty of Plantation Management of the Wayamba University Of Sri Lanka, Faculty of Agriculture of the Ruhuna University Faculty of Applied Sciences of the Rajarata University of Sri Lanka	The project will work closely with these national universities and professional bodies responsible for environment, agriculture health and others as appropriate to source technical expertise and research partnerships. Partnerships with public sector training institutions identified as relevant during the project formulation will also be explored.
UN Environment	The United Nations Environment (UN Environment) will implement the project and bring to bear its vast scientific and empirical experience of critical relevance to the objectives of the project
Bioversity International (formerly International Plant Genetic Resources Institute)	Bioversity International will be one of the Lead Executing Agency for the project. Bioversity International will provide scientific support and technical expertise as required by the MMDE and other national partners in

	accordance with the objective, components, outputs and activities. Bioversity International will be a member of the Project Steering Committee and participate in project site visits and technical meeting (They will not use Project money for their travelling)
South Asia Cooperative Environment Programme (SACEP) IUCN-Sri Lanka	SACEP will facilitate the administrative operations of the project management unit and will facilitate tasks including recruitment of local consultants, temporary facilitation for establishment of project management until MMDE get full clearance from the Budget Department, facilitating the organization of local workshop arrangements for training and awareness raising.
Local Communities Community-based Organizations - Suhada funeral society - Eksath funeral society - Parakum elder society - Cooperative Rural Bank Farmer Organizations - Irrigation farmer organizations - Palugaswewa New farmer organization Women Groups - Indunil Women Rural Development Society - Parami womensociety - Diriyata saviyak women society Youth Groups - Shilpa Youth Society	They will have access to project benefits including extensive training and capacity building and other benefits arising through the project. Local communities will participate in the documentation of information and the maintenance and use of traditional knowledge and will be involved in the organization of farmers' field days and seed diversity fairs.
Private Sector Organization National Development Bank (NDB Bank) Ceylon Chamber of Commerce Ceylon Eco Organics (Pvt) Ltd	Representatives of Private Sector Organizations will take part in ongoing project consultations, workshops and seminars and relevant field activities. They will provide guidance to the project on facilitating local community access to financial assistance and credit as well as the identification of potential markets for niche products arising from VTCS landscapes.

Workplan and timetable (three years) as indicated in the APPENDIX 5 of the project document

	Key Indicative Activities	Year 1	Year 2	Year 3
Component 1. Implementation of biodiversity based options that improve sustainable landscape management in socio-ecological sensitive areas				
Output 1.1: Socio-ecological and biophysical system properties mapped and defined in 2 Project landscapes				
1.1.1	Undertake comprehensive baseline assessments (including gender, human health) in 2 project landscapes			
1.1.2	Design and execute systems mapping 'expert' workshops			
1.1.3	Undertake participatory systems mapping and planning exercises (in cascade and inter-cascade level) to determine factors and processes that interact with each other to influence food security, human wellbeing and ecosystem health (via ecosystem service identification)			
1.1.4	Analysis of data and modelling of conservation and development scenarios and establish cascade model village development guidelines			
1.1.5	Produce reports, peer-reviewed papers and other knowledge products			
Output 1.2: Community familiarization on VTCS restoration and agroecological and sustainable land management strategies and practices				
1.2.1	Production of community-level awareness raising and training materials on VTCS values and importance, and agroecology and sustainable land management practices			
1.2.2	Community-level awareness raising workshops/programmes held in project areas on the importance of the values, goods and services of cascade tank ecosystems and their conservation			
1.2.3	Support community-level training on VTCS restoration processes, planning and management			
1.2.4	Support community-level training on agroecology and sustainable land management practices			
Output 1.3: Physical and ecological components of selected VTCSs restored as pilot models				
1.3.1	Participatory planning of rehabilitation and restoration of VTCSs			
1.3.2	Repair and renovation of tank headworks and partial de-silting of tanks			

1.3.3	Development of downstream water management system			
1.3.4	Promote conservation practices in immediate upstream landscapes			
1.3.5	Collection of tree and other planting materials and establishment of community nurseries			
1.3.6	Restoration of *godawala*, *kiul-ela*, *iswetiya* and *yathuru wala* and establishment of medicinal and underutilized plants			
1.3.7	Tree planting programme in *kattakaduwa*, *kiul-ela*, *godawala*, *gasgommana*, homegardens and herbal gardens through *shramadana* campaigns			
Output 1.4: Biodiversity-based agroecologicial and sustainable integrated land management practices adopted in the two selected VTCS pilot schemes				
1.4.1	Support the implementation of sustainable land management practices that reduce human-animal conflict			
1.4.2	Promote ecological agriculture methods and practices that reduce the application of agrochemicals and improve soil and water quality			
1.4.3	Integrate agrobiodiversity, including medicinal and underutilized species and practices, for improved nutrition, human health and livelihoods in cascade landscapes and food production systems			
Output 1.5: Goods, services and functions of VTCS ecosystems identified and mainstreamed				
1.5.1	Identify, group and prioritize key goods, services and functions from VTCS			
1.5.2	Establish gender-sensitive value chains for prioritized cottage-based industries and handicrafts based on VTCS products			
1.5.3	Establish value chains for prioritized agricultural, food and medicinal products from VTCS			
1.5.4	Identify options for certification and labelling for key goods and services arising from VTCS			
1.5.5	Promote ecotourism linked to conservation and sustainable use in VTCS including cultural values e.g. traditional performing arts, local food cultures, traditional crafts and knowledge			
1.5.6	Establish market centres for local products			
1.5.7	Promote healthy food consumption practices/patterns			
Output 1.6: Cost-benefit aspects of the restoration of VTCS monitored and analysed using economic methodologies				

1.6.1	Identify relevant experts, tools and evaluation criteria			
1.6.2	Identify the costs and benefits and extended cost benefit analysis of VTCS restoration (output 1.3) and undertake their valuation			
1.6.3	Undertake sampling, data collection and analysis			
1.6.4	Publication of reports, peer-reviewed paper and other knowledge products			
Component 2. Strengthened institutions, policies and integrated landscape planning of village tank cascade systems (VTCS) in socio-ecological sensitive areas				
Output 2.1: Awareness raising and capacity building of key partner institutions, local organizations and communities in participatory integrated landscape management planning of VTCS for improved ecohealth outcomes				
2.1.1	Identify key experts and trainers and awareness raising and training materials			
2.1.2	Create awareness among key stakeholders, institutions, local organizations and communities of the rationale for participatory integrated landscapes management of VTCS, and the multiple benefits in project areas			
2.1.3	Training of key strategic stakeholders (including community-level champions, women and youth) in integrated landscape management			
Output 2.2: Relevant national policies and legislation for enabling environment for the sustainable integrated landscape management reviewed and revisions recommended to the Government				
2.2.1	Review existing policies, legislation and institutional frameworks pertaining to integrated landscape management in cascade landscapes			
2.2.2	Review findings and outputs from previous and ongoing projects and initiatives operating in VTCS aiming to improve sustainable integrated landscape management			
2.2.3	Adopt or adapt relevant outputs and knowledge products for use in project areas			
2.2.4	Recommend revision/review of key policy instruments and legislative framework			
Output 2.3: Participatory sustainable integrated landscape management planning and coordination platforms developed at district and local level				
2.3.1	Identification and engagement of key actors and stakeholders to develop cascade system level platforms			

2.3.2	Establish a shared understanding of VTCS landscape management conditions, challenges and opportunities in project areas			
2.3.3	Undertake collaborative planning to develop an agreed action plan for implementation of integrated landscape management in project areas including agreed stakeholder interventions			
2.3.4	Implement agreed action plan with attention to maintaining collaborative commitments			
2.3.5	Platform undertakes monitoring of action plan implementation for adaptive management and effective inter institutional coordination and accountability			
Output 2.4: Participatory sustainable integrated landscape planning/management guidelines developed for VTCS in socio-ecological sensitive areas				
2.4.1	Review previous efforts to promote and develop integrated landscape management planning guidelines			
2.4.2	Draft comprehensive integrated landscape management planning guidelines based on project outputs and experiences for consideration of landscape planning platform and communities in project areas			
2.4.3	Consultation and presentation of integrated landscape management planning guidelines to relevant actors, stakeholders and communities beyond project areas			
2.4.4	Revise and prepare guidelines for integrated landscape management			
2.4.5	Publish and disseminate final integrated landscape planning/management guidelines			
2.4.6	Establish strategic cascade conservation/management assessments			
Component 3. Knowledge management, partnerships and capacity building for better sustainable integrated landscape management in support of improved ecosystem services and ecohealth outcomes				
Output 3.1: Knowledge enhancement mainstreamed to national extension, research institutions, including universities, and policy makers and other stakeholders on cascade ecology and landscape management, ecosystem services and ecohealth approaches				
3.1.1	Consultative workshops held with universities and awareness programmes for schools on cascade ecology and ecohealth approaches			
3.1.2	Development of relevant curricula materials for universities, schools and for informal sector on cascade ecology and ecohealth approaches			
3.1.3	Support the implementation of short courses on cascade ecology and ecohealth approaches in universities			

3.1.4	Familiarization workshops for policy makers, national extension and research staff and other stakeholders on cascade ecology and ecohealth approaches			
Output 3.2: Concept of Cascade Ecology established through workshops, symposia and other knowledge products				
3.2.1	Establish a cascade ecology 'community of practice' (CoP)			
3.2.2	Promote concept of cascade ecology among national and international partners (including national cascade ecology symposium)			
3.2.3	Publish state of knowledge book on cascade ecology and other knowledge products			
3.2.4	Develop cascade ecology database and web-based knowledge portal and resources			
Output 3.3: Knowledge base on good practices, technical bulletins, training manuals and policy briefs on cascade landscape management, ecosystem services and ecohealth established				
3.3.1	Collect, review, interpret, verify and establish knowledge systems			
3.3.2	Publish good practices for cascade landscape restoration and management, sustainable land management practices and ecohealth approaches			
3.3.3	Develop training manuals that support the design and implementation of cascade landscape restoration and management and sustainable land management practices for better ecohealth outcomes			
3.3.4	Publish technical bulletins for specific elements of cascade landscape restoration and sustainable land management			
3.3.5	Develop policy briefs to promote and support cascade landscape restoration and management			
Output 3.4: Cascade ecosystem health and services, including human health factors, identified and valued				
3.4.1	Identify key experts and tools for valuation of ecosystem services, which include valuation of human health			
3.4.2	Identify key ecosystem services with clear definition of benefits for human health			
3.4.3	Value cascade landscape ecosystem services, data collection and analysis			
3.4.4	Publish reports, peer-reviewed paper and other knowledge products			

Component 4. Project monitoring and evaluation				
4.1	Finalize and disseminate project Monitoring and Evaluation Framework			
4.2	Establish reporting plan and requirements			
4.3	Submit project and financial reports to UNEP			
4.4	Provide input to the project Mid-Term Evaluation			
4.5	Provide input to the project Final Evaluation			
Component 5. Project Management				
5.1	Establish arrangements for overall project administration and implementation infrastructure including coordination units			
5.2	Plan and undertake a full project inception meeting			
5.3	Establish and operate project budgeting and accounting system			
5.4	Review and refine work plans with project coordinator and partners based on better understanding of local context			
5.5	Establish project National Steering Committees and conduct regular meetings			
5.6	Where relevant, establish additional site or technical committees			
5.7	Establish International Technical Advisory Committee to provide backstopping and guidance to technical components			

Expenditure by components (threee years) as indicated in the APPENDIX 1 of the project document (USD)

UNEP Budget Line			TOTAL Budget	EXPENDITURE BY PROJECT COMPONENT/ACTIVITY						EXPENDITURE BY CALENDAR YEAR			
				C1 Implementation of biodiversity options	C2 Strengthened institutions	C3 Partnerships and capacity building	C4 Knowledge information and M&E	C5 Project Management	Total	Year 1	Year 2	Year 3	Total
10	PERSONNEL COMPONENT												
	1100	*Project personnel*											
	1101	Project Director	0	0	0	0	0	0	0	0	0	0	0
	1102	Lead Technical Adviser	193,500	128,000		48,000	7,000	10,500	193,500	64,500	64,500	64,500	193,500
	1103	National Project Manager	50,000	8,000	7,000	7,000	6,500	21,500	50,000	17,000	17,000	16,000	50,000
	1104	Project Field Coordinators (2)	11,982	3,000	3,000	3,482	500	2,000	11,982	3,992	3,995	3,995	11,982
	1105	Assistant Field Coordinators (2)	6,000	1,500	2,000	1,000	500	1,000	6,000	2,000	2,000	2,000	6,000
	1199	**Sub-total**	**261,482**	**140,500**	**12,000**	**59,482**	**14,500**	**35,000**	**261,482**	**87,492**	**87,495**	**86,495**	**261,482**
	1200	*Consultants*											
	1202	Agrobiodiversity Specialist	186,500	0	77,000	98,000	11,500	0	186,500	62,167	62,167	62,166	186,500
	1201	Landscape management and governance	50,300	20,100	20,100	10,100	0	0	50,300	20,100	15,100	15,100	50,300
	1202	Landscape modelling and GIS specialist	20,000	10,000	5,000	5,000	0	0	20,000	8,000	8,000	4,000	20,000
	1203	Health and indigenous medicine	12,300	10,150	0	2,150	0	0	12,300	4,100	4,100	4,100	12,300
	1204	Value chain and marketing specialist	12,000	9,550	1,450	1,000	0	0	12,000	2,000	6,000	4,000	12,000
	1299	**Sub-total**	**281,100**	**49,800**	**103,550**	**116,250**	**11,500**	**0**	**281,100**	**96,367**	**95,367**	**89,366**	**281,100**
	1300	*Administrative Support*											
	1301	Administrative Assistant	40,000	5,000	5,000	4,500	4,500	21,000	40,000	13,400	13,400	13,200	40,000
	1302	Financial management	47,318	0	0	0	0	47,318	47,318	15,773	15,773	15,773	47,318
	1399	**Sub-total**	**87,318**	**5,000**	**5,000**	**4,500**	**4,500**	**68,318**	**87,318**	**29,173**	**29,173**	**28,973**	**87,318**
	1600	*Travel on official business*											
	1601	Travel	80,000	27,000	14,500	22,000	4,000	12,500	80,000	26,167	26,167	25,667	80,000
	1699	**Sub-total**	**80,000**	**27,000**	**14,500**	**22,000**	**4,000**	**12,500**	**80,000**	**26,167**	**26,167**	**25,667**	**80,000**
1999	Component total		709,900	222,300	135,050	202,232	34,500	115,818	709,900	241,198	238,201	230,500	709,900
20	SUB-CONTRACT COMPONENT												
	2100	*Sub-contracts (MOUs/LOAs for supporting and cooperating agencies)*											
	2101	Socio-ecological/biophysical assessment (1.1)	50,000	50,000	0	0	0	0	50,000	30,000	10,000	10,000	50,000
	2102	Increase awareness	45,000	15,000	15,000	15,000	0	0	45,000	15,000	15,000	15,000	45,000
	2103	VTCS renovation and CBA	300,000	250,000	15,000	35,000	0	0	300,000	150,000	125,000	25,000	300,000
	2104	Sustainable Integrated Landscape Management/Agroecology practices (1.4)	95,000	70,000	15,000	10,000	0	0	95,000	10,000	50,000	35,000	95,000
	2105	Value chain development	45,000	45,000	0		0	0	45,000	5,000	20,000	20,000	45,000
	2106	Valuation of ecosystem services for human health	25,000	0	0	25,000	0	0	25,000		15,000	10,000	25,000
	2107	SLM Guidelines development	10,000	0	10,000		0	0	10,000	1,000	5,000	4,000	10,000
	2108	Knowledge management/communications	47,000	0	0	47,000	0	0	47,000	5,000	27,000	15,000	47,000
	2109	Biodiversity and community health review and analysis	15,000	5,000	5,000	5,000	0	0	15,000	10,000	5,000		15,000
	2110	Policy and institutional arrangements review	15,000	0	15,000	0	0	0	15,000		10,000	5,000	15,000
	2111	Land Degradation and Climate Change assessment	47,100	7,700	21,700	17,700	0	0	47,100	15,700	15,700	15,700	47,100
	2,199	**Sub-total**	**634,100**	**442,700**	**96,700**	**154,700**	**0**	**0**	**634,100**	**241,700**	**297,700**	**154,700**	**634,100**
2,999	Component total		634,100	442,700	96,700	154,700	0	0	634,100	241,700	297,700	154,700	634,100
30	TRAINING COMPONENT												
	3200	*Group training*											
	3201	Training Trainers	15,000	5,000	3,000	7,000	0	0	15,000	15,000	0	0	15,000
	3202	Training workshops (community and farmer groups)	25,000	10,000	5,000	9,000	0	1,000	25,000	10,000	8,000	7,000	25,000
	3203	Training modules	20,000	5,000	4,000	10,000	1,000	0	20,000	10,000	5,000	5,000	20,000
	3204	Short courses - universities, other	30,000	0	0	30,000	0	0	30,000	0	10,000	20,000	30,000
	3299	**Sub-total**	**90,000**	**20,000**	**12,000**	**56,000**	**1,000**	**1,000**	**90,000**	**35,000**	**23,000**	**32,000**	**90,000**
	3300	*Meetings/Conferences*											
	3301	Inception workshop	20,000	6,000	5,000	6,000	2,000	1,000	20,000	20,000	0	0	20,000
	3302	Project Steering Committees	15,000	0	0	0	10,000	5,000	15,000	5,000	5,000	5,000	15,000
	3303	PSCC meetings	12,000	0	0	0	10,000	2,000	12,000	4,000	4,000	4,000	12,000

	3304	SILM Platforms	9,000	0	9,000	0	0	0	9,000	3,000	3,000	3,000	9,000
	3305	Cascade ecology symposium	35,000	0	0	35,000	0	0	35,000	0	35,000	0	35,000
	3306	Schools, university, policy makers workshops	30,000	0	0	30,000	0	0	30,000	0	15,000	15,000	30,000
	3307	International conference attendance	38,000	15,000	0	23,000	0	0	38,000	13,000	13,000	12,000	38,000
	3308	Technical Advisory Committee	15,000	4,000	4,000	4,000	3,000	0	15,000	5,000	5,000	5,000	15,000
	3399	**Sub-total**	**174,000**	**25,000**	**18,000**	**98,000**	**25,000**	**8,000**	**174,000**	**50,000**	**80,000**	**44,000**	**174,000**
3,999	**Component total**		**264,000**	**45,000**	**30,000**	**154,000**	**26,000**	**9,000**	**264,000**	**85,000**	**103,000**	**76,000**	**264,000**
40	**EQUIPMENT AND PREMISES COMPONENT**												
	4100	*Expendable equipment*											
	4101	Office supplies	20,000		0		0	20,000	20,000	10,000	5,000	5,000	20,000
	4199	**Sub-total**	**20,000**	**0**	**0**	**0**	**0**	**20,000**	**20,000**	**10,000**	**5,000**	**5,000**	**20,000**
	4200	*Non-expendable equipment*											
	4201	Office equipment	15,000	0	0	0	0	15,000	15,000	7,000	4,000	4,000	15,000
	4202	Computers	15,000	4,000	3,000	5,000	0	3,000	15,000	10,000	5,000	0	15,000
	4203	Field equipment	20,000	20,000	0	0	0	0	20,000	15,000	5,000	0	20,000
	4299	**Sub-total**	**50,000**	**24,000**	**3,000**	**5,000**	**0**	**18,000**	**50,000**	**32,000**	**14,000**	**4,000**	**50,000**
	4300	*Premises (office rent, maintenance of premises, etc.)*											
	4301	Office supplies	18,000	0	0	0	0	18,000	18,000	6,000	6,000	6,000	18,000
	4399	**Sub-total**	**18,000**	**0**	**0**	**0**	**0**	**18,000**	**18,000**	**6,000**	**6,000**	**6,000**	**18,000**
4,999	**Component total**		**88,000**	**24,000**	**3,000**	**5,000**	**0**	**56,000**	**88,000**	**48,000**	**25,000**	**15,000**	**88,000**
50	**MISCELLANEOUS COMPONENT**												
	5100	*Operation and maintenance of equipment*											
	5101	Vehicle hire/costs	25,000	10,000	8,500	5,000	1,500	0	25,000	10,000	8,500	6,500	25,000
	5102	Field equipment	3,500	2,000	500	1,000	0	0	3,500	2,500	500	500	3,500
	5103	Computers, etc	3,500	1,500	1,000	1,000	0	0	3,500	2,000	1,000	500	3,500
	5199	**Sub-total**	**32,000**	**13,500**	**10,000**	**7,000**	**1,500**	**0**	**32,000**	**14,500**	**10,000**	**7,500**	**32,000**
	5200	*Reporting costs*											
	5201	Reports	15,000	0	0	7,000	8,000	0	15,000	5,000	5,000	5,000	15,000
	5202	Awareness materials	25,000	7,500	5,000	7,500	5,000	0	25,000	5,000	7,500	12,500	25,000
	5203	Training materials	25,000	12,000	6,250	6,750	0	0	25,000	12,000	6,000	5,000	25,000
	5204	Cascade ecology book	15,000	0	0	15,000	0	0	15,000	0	2,000	13,000	15,000
	5205	Scientific publications	10,000	10,000	0	0	0	0	10,000	0	5,000	5,000	10,000
	5206	Web-based portal/website costs	20,000	4,000	2,000	14,000	0	0	20,000		10,000	10,000	20,000
	5207	Good practices, technical bulletins	12,000	0	0	12,000	0	0	12,000	0	5,000	7,000	12,000
	5299	**Sub-total**	**122,000**	**33,500**	**13,250**	**62,250**	**13,000**	**0**	**122,000**	**22,000**	**42,500**	**57,500**	**122,000**
	5300	*Sundry*											
	5301	Communications	20,000	3,500	3,000	11,500	1,000	1,000	20,000	7,500	5,000	7,500	20,000
	5399	**Sub-total**	**20,000**	**3,500**	**3,000**	**11,500**	**1,000**	**1,000**	**20,000**	**7,500**	**5,000**	**7,500**	**20,000**
	5500	*Evaluation*											
	5501	Gender related activities	20,000	4,500	6,000	6,500	1,000	0	20,000	9,000	6,000	5,000	20,000
	5502	Mid term evaluation	25,000	0	0	5,000	20,000	0	25,000	0	25,000	0	25,000
	5503	Final evaluation	25,000	0	0	5,000	20,000	0	25,000	0	0	25,000	25,000
	5504	Annual Audit	0										0
	5599	**Sub-total**	**70,000**	**4,500**	**6,000**	**18,500**	**41,000**	**0**	**70,000**	**9,000**	**31,000**	**30,000**	**70,000**
5,999	**Component total**		**244,000**	**55,000**	**32,250**	**99,250**	**56,500**	**1,000**	**244,000**	**53,000**	**88,500**	**102,500**	**244,000**
		TOTAL COST	**2,000,000**	**789,000**	**297,000**	**615,182**	**117,000**	**181,818**	**2,000,000**	**668,838**	**752,401**	**578,700**	**2,000,000**

Group Works

Group 01

<u>Component 01 :</u> Implementation of biodiversity based options that improve sustainable landscape management in socio-ecological sensitive areas.

Tasks:

- Go to the workbook component 01
- Identify most appropriate activities and sub activities for the 1st year implementation
- Identify appropriate time period for implantation of the above activity/s and marked/highlight in the sheet
- Identify capable/expertise/responsible institutes to carry out the identified activities and indicated in relevant Box (pl see the list of abbreviations of the key stakeholders and partners of the project indicated in the bottom of Annex 1)

Group Works

Group 02

<u>Component 02:</u> Strengthened institutions, policies and integrated landscape planning of village tank cascade systems (VTCS) in socio-ecological sensitive areas

Tasks:

- Go to the workbook component 02
- Identify most appropriate activities and sub activities for the 1st year implementation
- Identify appropriate time period for implantation of the above activity/s and marked/highlight in the sheet
- Identify capable/expertise/responsible institutes to carry out the identified activities and indicated in relevant Box (pl see the list of abbreviations of the key stakeholders and partners of the project indicated in the bottom of Annex 1)

Group Works

Group 03

<u>Component 03:</u> Knowledge management, partnerships and capacity building for better sustainable integrated landscape management in support of improved ecosystem services and ecohealth outcomes

Tasks:

- Go to the workbook component 03 Identify most appropriate activities and sub activities for the 1st year implementation
- Identify appropriate time period for implantation of the above activity/s and marked/highlight in the sheet
- Identify capable/expertise/responsible institutes to carry out the identified activities and indicated in relevant Box (pl see the list of abbreviations of the key stakeholders and partners of the project indicated in the bottom of Annex 1)

Group Works

Group 04

<u>Component 04:</u> Project implementation based on results based management and application of project lessons learned in future operations facilitated

Tasks:

- Go to the workbook component 04 Project Monitoring, Evaluation Management
- Identify most appropriate activities and sub activities for the 1st year implementation
- Identify appropriate time period for implantation of the above activity/s and marked/highlight in the sheet
- Identify capable/expertise/responsible institutes to carry out the identified activities and indicated in relevant Box (pl see the list of abbreviations of the key stakeholders and partners of the project indicated in the bottom of Annex 1)
- Go to the Annex 02 of the workbook activity based budget by components
- Identify relevant activities of UNEP budget line for the first year activities related to each component
- Calculate estimated budget for each activity and indicate in the relevant space

Annex 01: First year Work plan and timetable

Component 1: Adaptive Management	Planning months 2019-2020 and Responsible Agencies

	Key Indicative Activities	Sep-Dec	Jan-Apr	May - Aug
Component 1. Implementation of biodiversity based options that improve sustainable landscape management in socio-ecological sensitive areas				
Output 1.1: Socio-ecological and biophysical system properties mapped and defined in 2 Project landscapes				
1.1.1	Undertake comprehensive baseline assessments (including gender, human health) in 2 project landscapes			
1.1.2	Design and execute systems mapping 'expert' workshops			
1.1.3	Undertake participatory systems mapping and planning exercises (in cascade and inter-cascade level) to determine factors and processes that interact with each other to influence food security, human wellbeing and ecosystem health (via ecosystem service identification)			
Output 1.2: Community familiarization on VTCS restoration and agroecological and sustainable land management strategies and practices				
1.2.1	Production of community-level awareness raising and training materials on VTCS values and importance, and agroecology and sustainable land management practices			
1.2.2	Community-level awareness raising workshops/programmes held in project areas on the importance of the values, goods and services of cascade tank ecosystems and their conservation			
1.2.3	Support community-level training on VTCS restoration processes, planning and management			
1.2.4	Support community-level training on agroecology and sustainable land management practices			
Output 1.3: Physical and ecological components of selected VTCSs restored as pilot models				
1.3.1	Participatory planning of rehabilitation and restoration of VTCSs			
1.3.2	Repair and renovation of tank headworks and partial de-silting of tanks			

Output 1.5: Goods, services and functions of VTCS ecosystems identified and mainstreamed				
1.5.1	Identify, group and prioritize key goods, services and functions from VTCS			
Output 1.6: Cost-benefit aspects of the restoration of VTCS monitored and analysed using economic methodologies				
1.6.1	Identify relevant experts, tools and evaluation criteria			
1.6.2	Identify the costs and benefits and extended cost benefit analysis of VTCS restoration (output 1.3) and undertake their valuation			
Component 2. Strengthened institutions, policies and integrated landscape planning of village tank cascade systems (VTCS) in socio-ecological sensitive areas				
Output 2.1: Awareness raising and capacity building of key partner institutions, local organizations and communities in participatory integrated landscape management planning of VTCS for improved ecohealth outcomes				
2.1.1	Identify key experts and trainers and awareness raising and training materials			
Output 2.3: Participatory sustainable integrated landscape management planning and coordination platforms developed at district and local level				
2.3.1	Identification and engagement of key actors and stakeholders to develop cascade system level platforms			
2.3.2	Establish a shared understanding of VTCS landscape management conditions, challenges and opportunities in project areas			
2.3.3	Undertake collaborative planning to develop an agreed action plan for implementation of integrated landscape management in project areas including agreed stakeholder interventions			
Output 2.4: Participatory sustainable integrated landscape planning/management guidelines developed for VTCS in socio-ecological sensitive areas				
2.4.1	Review previous efforts to promote and develop integrated landscape management planning guidelines			
Component 3. Knowledge management, partnerships and capacity building for better sustainable integrated landscape management in support of improved ecosystem services and ecohealth outcomes				
Output 3.2: Concept of Cascade Ecology established through workshops, symposia and other knowledge products				
3.2.1	Establish a cascade ecology 'community of practice' (CoP)			
Output 3.3: Knowledge base on good practices, technical bulletins, training manuals and policy briefs on cascade landscape management, ecosystem				

services and ecohealth established				
3.3.1	Collect, review, interpret, verify and establish knowledge systems			
Output 3.4: Cascade ecosystem health and services, including human health factors, identified and valued				
3.4.1	Identify key experts and tools for valuation of ecosystem services, which include valuation of human health			
3.4.2	Identify key ecosystem services with clear definition of benefits for human health			
Component 4. Project monitoring and evaluation				
4.1	Finalize and disseminate project Monitoring and Evaluation Framework			
4.2	Establish reporting plan and requirements			
4.3	Submit project and financial reports to UNEP			
Component 5. Project Management				
5.1	Establish arrangements for overall project administration and implementation infrastructure including coordination units			
5.2	Plan and undertake a full project inception meeting			
5.3	Establish and operate project budgeting and accounting system			
5.4	Review and refine work plans with project coordinator and partners based on better understanding of local context			
5.5	Establish project National Steering Committees and conduct regular meetings			
5.6	Where relevant, establish additional site or technical committees			
5.7	Establish International Technical Advisory Committee to provide backstopping and guidance to technical components			

List of Abbreviations of the key stakeholders and partners

1. BDS - Biodiversity Secretariat/Ministry of Environment 2. MA -Ministry of Agriculture 3. MED -Ministry of Economic Development 4. ME - Ministry of Education 5. MRI -Ministry of Rural Industries 6. PMU - Project Management Unit 7. PGRC - Plant Genetic Resources Centre/DOA 8. NRMC - Natural Resources Management Centre DOA 9. TED - Training and Extension Division/DOA 10. HORDI -Horticultural Crop Research Development Institute 11. DAPH -Department of Animal Production and Health. 12. PDAPH -Provincial Departments of Animal Production and Health 13. DEA -Department of Export Agriculture 14. PDOA -Provincial Departments of Agriculture 15. FD - Forest Department of Forest Conservation 16. DM -Department of Meteorology	17. DNBG -Department of National Botanic Gardens 18. DWLC -Department of Wildlife and Conservator 19. DAS -Department of Agrarian Services 20. NGJRI -National Gem and Jewelry Research Institute 21. NAQDA -National Aquatic Resources Development Agency 22. BMARI -Bandaranayke Memorial Aurvedic Research Institute 23. WUSL -Wayamba University of Sri Lanka FPMAB 24. UOP -University of Peradeniya Faculty of Agriculture, 25. UOR -University of Ruhuna/Faculty of Agriculture 26. SEWA -SEWALANKA Foundation 27. GMSL -Green Movement of Sri Lanka **28.** CDC - Community Development Center 29. FAO - Food and Agriculture Organization 30. IWMI - International Water Management Institute (IWMI) 31. OS - Outsource to Consultants

Annex 02; First year budget by components (USD)

		EXPENDITURE BY PROJECT COMPONENT/ACTIVITY					
		1	2	3	4	5	Total
UNEP BUDGET LINE/OBJECT OF EXPENDITURE		Implementation Of Biodiversity	Strengthened Institutions	Partnership Awareness	Knowledge M&E	Project Management	
PROJECT PERSONNEL COMPONENT							
1100	**Project Personnel**						
1101	Global Project Director						
1102	Lead technical Advisor						
1102	National Project Manger						
1103	Project Field Coordinator (2)						
1104	Assistant Field Coordinator (2)						
1199	**Sub-Total**						
1200	**Consultants**						
1202	Agrobiodiversity Specialist						
1203	Landscape Management and governs						
1204	Landscape Modeling and GIS Specialist						
1205	Health Nutrition and indigenous medicine						
1206	Value Chain and market Specialist						
1299	**Sub-Total**						
1300	**Administrative support**						
1301	Administration Assistant						
1302	Financial Management						
1399	**Sub-Total**						
1600	**Travel on official business (above staff)**						
1601	Travel						
1699	**Sub-Total**						

1999	**Component Total**						
SUB-CONTRACT COMPONENT 2100	**Sub-contracts (MoU's/LA's for cooperating organizations and supporting agencies)**						
2101	Socio-ecological/biophysical assessment						
2102	Increase awareness						
2103	VTCS renovation and CBA						
2104	Sustainable Integrated Landscape Management /Agroecology practices (1.4)						
2105	Value Chain Development						
2106	Valuation of ecosystem services for human health						
2107	SLM Guidelines development						
2108	Knowledge management / Communication						
2109	Biodiversity and Community health review and analysis						
2110	Policy and institutional arrangement review						
2111	Land degradation, Biodiversity and climate change assessment						
2299	**Sub-Total**						
2999	**Component Total**						
TRAINING COMPONENT							
3200	**Group training**						
3201	Training trainers						
3202	Training Workshop (community and Farmer Group)						
3203	Training modules						

3204	Short courses – Universities, others						
3299	**Sub-Total**						
3300	**Meetings/conferences**						
3301	Inception workshop						
3302	Project Steering Committee						
3303	PSCC meetings						
3304	SILM platform						
3305	Cascade Ecology Symposium						
3306	Schools, University, Policy maker Workshop(3.1)						
3307	International Conference attendance						
3308	Technical Advisory committee						
3399	**Sub-Total**						
3999	**Component Total**						
EQUIPMENT & PREMISES COMPONENT							
4100	**Expendable equipment**						
4101	Office supplies						
4199	**Sub-Total**						
4200	**Non-expendable equipment (items above US$ 1,000 each)**						
4201	Office equipment						
4202	Computers						
4203	Field equipment						
4299	**Sub-Total**						
4300	**Premises (Office rent, Maintenance of premises)**						
4301	**Office Supplies**						
4399	**Sub total**						
4999	**Component Total**						
MISCELLANEOUS COMPONENT							
5100	**Operation and maintenance of equip.**						

5101	Vehicle hire cost						
5102	Office equipment						
5103	Computer etc						
5199	**Sub-Total**						
5200	**Reporting costs**						
5201	Reports						
5202	Awareness Material						
5203	Training Material (3.3)						
5204	Cascade ecology book (3.2)						
5205	Scientific publication						
5206	Web – based portal/Website Costs						
5207	Good practices, technical bulletins(3.3)						
5299	**Sub-Total**						
5300	**Sundry**						
5301	Communication costs						
5399	**Sub-Total**						
5500	**Evaluation**						
5501	Gender Related activities						
5502	Mid term evaluation						
5503	Final evaluation						
5504	Annual Audit						
5599	**Sub-Total**						
5999	**Component Total**						
TOTAL							

Acknowledgment

This workbook is specially prepared as a working document for the 1st planning workshop of the Healthy landscape project by land Resources Division of the Ministry of Mahaweli Development and Environment.

Land Resources Division would like to extend sincere gratitude to all participant of the workshop specially secretary, Ministry of Mahaweli development and Environment and Secretary, Ministry of Agriculture, Rural Economic Affairs, Irrigation and Fisheries and Aquatic Resources Development. While appreciating your valuable contribution as an expert/project partner/steering committee member for the successful completion of this workshop

Special word of appreciation goes to **Dr Danny Hunter**, International Agrobiodiversity Consultant, Mr. Max Zieren from United Nation environment and also thanking Mr.W.K Rathnadeera programme coordinator, SACEP.

Finally land Resources Division would like to thank officers of the Department of Agriculture for their generous support throughout this event.

Thank You
Land Resources Division
Ministry of Mahaweli Development and Environment