

## ECOSYSTEM SERVICES




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**HARITHA UDAYA ENVIRONMENTAL TRUST  
COLLABORATE AND UNDER THE GUIDANCE OF  
ENVIRONMENTAL PLANNING & ECONOMIC AFFAIRS DIVISION  
MINISTRY OF ENVIRONMENT**



**EXECUTIVE SUMMERY**

<p><b>Project Proponent and Conceptual Ownership</b></p>	<p>Haritha Udaya Environmental Trust</p> 
<p><b>To Represent and Evaluation For</b></p>	<p>Environmental Management &amp; Economics Affairs Division, Ministry of Environment</p>
<p><b>Project Title</b></p>	<p>Payment Scheme on Ecosystem Services (PSES), Conceptual Green Accounting Business Model – Haritha Udaya Environmental Trust</p>
<p><b>Proposal Representation Year</b></p>	<p>2022</p>
<p><b>Project Implementation Year</b></p>	<p>2023 - 2025</p>
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**PAYMENT SCHEME ON ECOSYSTEM SERVICES (PSES), CONCEPTUAL GREEN ACCOUNTING BUSINESS MODEL – HARITHA UDAYA ENVIRONMENTAL TRUST WITH THE GUIDANCE OF ENVIRONMENTAL PLANNING & ECONOMIC AFFAIRS DIVISION, MINISTRY OF ENVIRONMENT**

**INTRODUCTION**

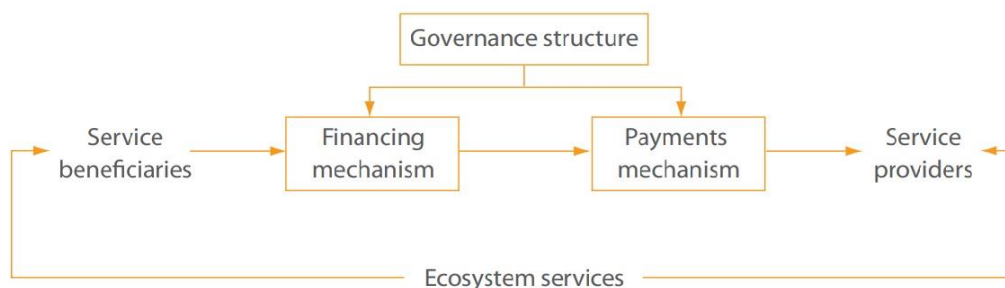
For an economy to “grow green”, investments should be made in natural capital. Natural capital provides both “direct” ecosystem services such as the provision of food and raw materials, and “indirect” ecosystem services such as carbon sequestration, watershed protection, aquifer recharge and biodiversity habitat provision. Ecosystem services (ES) support human economies and societies. They are usually irreplaceable, or can only be substituted for, at great cost.

Types of ES Services	Natural Forests	Agroforestry Lands
Provisioning	Food, Freshwater, Fuelwood	Food, Fuelwood, Timber
Regulating	Climate Regulation, Water Purification, Flood Regulation	Climate Regulation, Water Purification
Supportive	Nutrient Cycling, Soil Formation	Nutrient Cycling, Soil Formation
Cultural	Aesthetic, Spiritual, Educational, Recreation	Aesthetic, Educational

Source: United Nations Millennium Ecosystem Assessment, Ecosystems and Human Well-being: Synthesis (Washington DC, Island Press, 2005).

Incentives for sustainable management of ecosystems through payments for ecosystem services, or PES can boost action on sound ecosystem management. Payments for environmental services (PES) are part of a new and more direct conservation and sustainable business paradigm, explicitly recognizing the need to bridge the interests of landowners and outsiders/entrepreneurs.

**PES Flow Chart**



Source: Pagiola, S and G. Platias, “Introduction to payments for environmental services”, presentation at the ESSD Week 2005 – Learning Days, World Bank, Washington DC, 2005.

Why is PES so much interest...

- Declining supply of ecosystem services
- Impacts of climate change
- Potential to capitalize on the value of services and generate sustainable financing

Interms of capitalize ES values in to payment mode, plant food products are very much essential. In general, it is the proxy to all living beings on the earth through Photosynthesis pathway and provide bio energy (Carbohydrates) and clean Oxygen to the atmosphere. But up to now there is no any distinct methodology to convert this ES values of tree dominated landscapes interms of primary productivity (Carbon sequestration, Oxygen production) except Non-Timber Forest Products (NTFP) such as plant foods, medicinal ingredients etc. Therefore, there is a sustainable business opportunity to value these services and capitalize into national economy through a mechanism like landowner stewardship.

The concept of “Food Mandala” currently being implement by the Ministry of Environment and Wildlife Resources are expecting to introduce to the rural and suburb economies as a focal point to a Green Economy. Food Mandala (FM) is a collection of plant food items (Fruits, Pods, grains etc.) which is frequently find throughout that geographical locality and always highlight the centric idea of Sun as the main energy driving force for the entire living systems of the earth and expecting to mobilize communities for mainstreaming biodiversity and capitalize the existing ES values". Since the concept of FM is more generalized in ritual beliefs, the scientific knowledge and the theories behind on it can be used to develop a sustainable economy interms of establish reciprocal exchange system of food items, ensure the regional level food security, preserve the traditional agriculture knowledge and enhance the agrobiodiversity.



Prototypes and applications of Food Mandala in different ethnics in India and SriLanka  
 Sorce – [www.google.com](http://www.google.com)

To implement this comprehensive idea as a business model to strengthening the national economy, The project proponent suggests to develop a mechanism to value those ecosystem services which is acceptable on the international and national level guidelines.

## **RATIONALE AND SIGNIFICANCE OF THE PROJECT**

Ecosystems evolved naturally and with the intervention of anthropogenic activities provide a range of services, many of which are of fundamental importance to human well-being, for health, livelihoods, and survival. Nevertheless, over the last 50 years, humans have changed ecosystems more rapidly and extensively than in any comparable period of time in human history. Moreover, ecosystem degradation and the loss of biodiversity undermine ecosystem functioning and resilience. Thus, they threaten the ability of ecosystems to continuously supply the flow of ecosystem services for present and future generations. These threats are expected to become greater in the context of climate change and ever-increasing human consumption of resources. **Whence, ecosystem services can no longer be treated as inexhaustible and free 'goods' and their true value to society as well as the costs of their loss and degradation, need to be properly accounted for.**

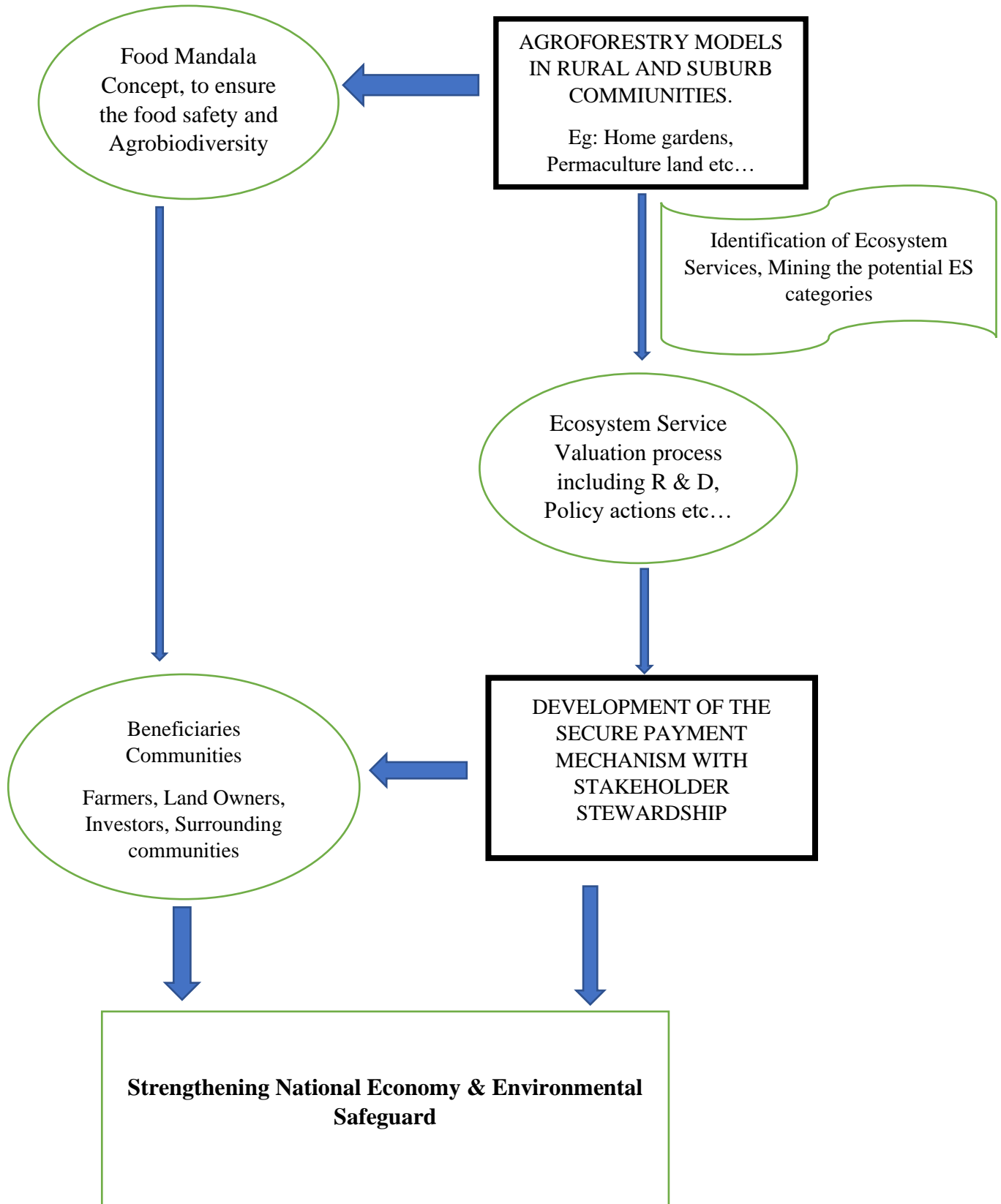
Although the importance of ecosystems to human society has many dimensions (ecological, socio-cultural and economic) and expressing the value of ecosystem services in monetary units is an important tool to raise awareness and convey the importance of ecosystems and biodiversity to policy makers. It can also assist the determination of the extent to which compensation should be paid for the loss of ecosystem services in liability regimes. Furthermore, the measurement of the broad range of ecosystem service flows and their values in monetary units is a fundamental step to improve incentives and generate expenditures needed for their conservation and sustainable use.

Information on monetary values of ecosystem services enables for more efficient use of funds through identifying where protection and restoration is economically most important and can be provided at lowest cost. Moreover, expressing ecosystem service values in monetary units also provides guidance in understanding user preferences and the relative value current generations place on ecosystem services. Due to the current socio-economic context of Sri Lanka, outcomes of the project will direct the nation in terms of self-sustainability on agriculturally based plant food products, economic viability on foreign reserves of biological assets.

## **GENERAL OBJECTIVES OF THE PROJECT**

- Establish the food security of rural and suburban communities and equally distribute the food provisioning services to other community levels in the island to reestablish the ancient reciprocal exchange system of ecosystem-based consumption goods.
- Increase the agrobiodiversity of the project lands and ensure minimizing the effect of land degradation, tree cover and biodiversity loss then simultaneously uplift the use of traditional tree crop varieties, sharing the indigenous knowledge of ecological farming and food processing.
- Identifying the most appropriate Ecosystem services provided by the initially selected land categories through comprehensive surveys and clear the pathway to Sri Lankan academic institutes to engage with further research and developments.
- Establish a secure transaction mechanism on ES providers through Green Accountancy Procedures.
- Development of national database on ES valuation and its related primary and secondary data.
- Create job opportunities and self-employments.

**PROPOSED PSES SYSTEM OPERATION FLOW**



### STAGES OF PES PROJECT DEVELOPMENTS

Stage	Assign Activities
1. Identify the demand, set objectives and determine values	<ul style="list-style-type: none"> <li>Review socio- economic context, demand for specific ecosystem services from specific potential buyers (commercial and individual).</li> <li>Define, measure and assess the specific ecosystem services, identify current and future research and policy requirements.</li> <li>Set objectives interms of national requirements.</li> <li>Determine economic and marketable values through environmental valuation</li> </ul>
2. Assess institutional & technical capacity and feasibility	<ul style="list-style-type: none"> <li>Assess legal, policy, and land ownership context</li> <li>Examine existing policy related to PES – land users should be able to receive payment, buyers to make payments (and if mandatory charges, fees or taxes, are used, they should be accessible to the PES programme) for example.</li> <li>Survey available PES support services and organizations.</li> </ul>
3. Establish institutional and contractual frameworks	<ul style="list-style-type: none"> <li>Design management, business and communication plans</li> <li>Determine institutional framework based on existing institutions, seek other ways to reduce transaction costs, build capacity as needed</li> <li>Determine effective and equitable payment approaches based on socio-economic and socio- cultural context.</li> <li>Prepare model contracts, other operational documents</li> </ul>
4. Implementation	<ul style="list-style-type: none"> <li>Communication, marketing, negotiation and registration of contracts – IT Based solutions</li> <li>Operationalize monitoring and verification.</li> <li>Operationalize financing and payments.</li> </ul>

The current situation in Sri Lankan context following Ecosystem Services of agroforestry landscapes could be identified as tradable and owing the baseline data in the last ten years of time duration.

Ecosystem Service Category	Identified Ecosystem Services	ES Sub Category	ES Valuation Methodology
Provisioning Services	Food	Vegetable Food	Market Price Method
	Raw materials	Timber	
	Medicinal ingredients	Medicinal Plant products	
Supporting Services	Primary Production	O2 productivity	Benefit Transfer Method
Regulating Services	Climate regulation	C – Sequestration	

**PROPOSED PROJECT DEVELOPMENT & IMPLEMENTATION PHASES**

<b>Phase</b>	<b>Activity</b>	<b>Sub Activities to be achieved</b>
<b>P 1</b>	Identification and Selection of ES categories which can be capitalize under Corporate Sustainability Responsibilities (CSR) in Sri Lankan Context.	<ul style="list-style-type: none"> <li>• Surveying of related policy and institutional involvement.</li> <li>• Development of ES valuation guidelines and accrediting.</li> <li>• Establishment of ES quantification and auditing agency.</li> </ul>
	Development of National Scale ES Valuation Database.	<ul style="list-style-type: none"> <li>• Promoting R&amp;D disciplines.</li> <li>• Establishment of Green Accounting Educational and Research Hub with academic and other institutional support.</li> </ul>
	Development of selection procedures and guidelines for potential ES providing landscapes.	<ul style="list-style-type: none"> <li>• Selection Criterias of project operational boundaries.</li> <li>• Selection of Servicing providers.</li> <li>• Feasibility studies on applicable green accounting procedures.</li> </ul>
<b>P2</b>	Establishment of mutual agreements with ES service providers, beneficiaries and investors.	<ul style="list-style-type: none"> <li>• Setup the IT related platforms to ensure the mutual trust with each stakeholder parties: Digital Smart Contracts</li> </ul>
	Annual Verifications & Assessments + Rerwordings / Monitoring and Evaluations	<ul style="list-style-type: none"> <li>• Streamlined Periodic Monitoring &amp; Evaluation process.</li> <li>• Establishment of secure payment mechanisms for beneficiaries.</li> <li>• ES Ledger for Investors with tangible benefits.</li> </ul>



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