

075**Cost benefit analysis of village tank rehabilitation programme in Hambantota district, Sri Lanka**E B I Dayananda ¹ and U A D P Gunawardane ²¹ Department of Agricultural Economics, University of Ruhuna, Sri Lanka² Department of Forestry and Environmental Science, University of Sri Jayewardenepura, Sri Lanka

Village tanks provide multiple benefits to the local people living in their periphery and also to communities outside the area. Non recognition of the true values of this resource has led to their degradation. For example, tank rehabilitation is usually not economically justifiable when the paddy benefits alone are considered. The main objective of this research was therefore to compare costs of village tank rehabilitation programme with the multiple benefits of village tanks.

Villagers use tank water for agriculture, fish, domestic purposes, livestock rearing, and also for industry such as brick production. There are in addition, recreational benefits enjoyed by the households. Such multiple benefits have been evaluated by a survey conducted in 10 village tanks (7 isolated and 3 cascade tanks) in Hambantota district of Sri Lanka. 175 households who live adjacent to the selected tanks were interviewed using a pre-tested questionnaire with embedded contingent valuation survey during the *maha* season of 2005/2006. Information on the use of tank system for purposes other than paddy cultivation was collected and contingent valuation method, market price approach and opportunity cost method were used in order to derive the economic value.

The benefits and costs were analyzed in a cost benefit framework using a 20 year time period and 10% discount rate. Results indicate that the rehabilitation project is only justifiable when multiple benefits are included. When paddy benefits alone are compared with tank rehabilitation costs, it results in negative net present value.

The implications of the results in reversing the attitudes of the government towards small tanks and their role in enhancing rural economies are also discussed.

076**Novel analytical techniques for improved decision making: Implications for consumers and institutions**C T Jayaratne ¹ and U A D P Gunawardane ²¹ Peoples Leasing Cooperation, Colombo, Sri Lanka² Department of Forestry and Environmental Science, University of Sri Jayewardenepura, Sri Lanka

Information availability plays a key role in determining the choices of consumers, firms and governments. However, externalities associated with most commodities represent information failure leading to incorrect decisions. The emerging scientific advances nevertheless have produced several new analytical techniques that could guide towards better decisions. The objective of the paper is to review the existing literature on such analytical techniques and assess the applicability of such tools within the Sri Lankan context.

Literature in environmental management and economics related disciplines revealed that availability of techniques such as Life cycle assessment (LCA) and food mile analysis for consumer products while institution or firm level decision making could be guided by tools such as management cost accounting and sustainable chain management.

LCA has often been used in evaluating environmental performances of different food production and food packaging options, waste management and transport options. The information of such analyses has been made available through product standards such as ISO 14040. Food mile is an indicator of transport costs of food items which could provide important guidelines for transport policy, international trade and product related environmental information for consumers.

The review elaborates on range of examples of application of such techniques over a wide range of consumer goods and services, institutions. The review reveals that although there seem to be sufficient analytical techniques available worldwide, the applicability of such tools within Sri Lanka has been very sparse. LCA studies are only limited to two products and the ISO standards have not been attempted yet. The study also highlights the need to improve the relevant data bases which would enable the rapid application of these tools and guide the decision maker towards sustainable directions.

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Economic implications of declaration of Knuckles conservation zone

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The objective of this study is to assess the economic impacts of Knuckles Conservation Zone (KCZ) on the livelihoods of peripheral households and vice versa the impact of the utilization of forest resources by households on the sustainability of the forest after the conservation zone declaration. A detailed population survey, observations, participatory methods and discussions were conducted to gather information as part of an EU funded IUCN project on forestry governance. Around 57% of the households are poor. Following the declaration, there has been a significant reduction in the number of households harvesting non-timber forest products (NTFP) even for subsistence purposes. The share of income derived through NTFP out of total household income is very minimal. Almost all households had been harvesting NTFPs earlier and now it has been reduced to 60% of households. Banning of chena cultivation in the forest area, following the conservation zone has posed negative impacts on livelihoods, as chena was one of the main income sources earlier. This natural resource has a higher potential for ecotourism, as viewed by communities. It is necessary to compensate for the loss of income from chena and reduced access to subsistence products from the forest. The future policies should be formulated in a way that provides economic incentives to the peripheral communities, which will encourage them to use the forest in sustainable manner. This could include sharing the tourist fee with the affected households. Each household would need to receive about Rs. 15, 000 per year to cover the lost access rights to the forests.

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An empirical investigation on factors affecting coconut growers in the Kurunegala district to adopt integrated pest management techniques

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The Coconut Development Office Divisions in the Kurunegala district were in the process of introducing Integrated Pest Management (IPM) techniques to the coconut growers in order to control the major pest and disease outbreaks of coconut plantations in the district. This study assesses the factors affecting these coconut growers to be innovative in adopting these IPM techniques in the cultivation.

The Choice Model used in consumer economics (McFadden 1974) was used as the theoretical base to explain this behaviour. There were 127 coconut growers belong to four regions, namely Dambadeniya, Kudalgamuwa, Weerambagedara, and Wellawa who had received a formal education on the use of IPM techniques in this respect from an Extension Officer/s attached to the Coconut Cultivation Board were selected to collect data during the April to June in 2005. The Ordered Logistic Regression techniques were used to estimate the coefficients of empirical model, in which five-dependent variables were developed to reflect the time taken by each grower to adopt at least two IPM techniques in the cultivation effectively, where the "least" and "most" time takers were named as "innovators" and "laggards", respectively. The results based on Logits and Marginal Probabilities suggest that factors such as age, education, income, and time commitment to the land had a significant and relatively higher impact on grower to be an "innovator". It also revealed that land size, availability of credit and skilled labor have no significant impact on this behaviour.