

assessment of sectoral projects particularly water resource development projects which are rather convenient to use. However thus far such methods have not been developed for road sector projects.

The present study was conducted to develop a Rapid Environment Assessment (REA) technique for the Sri Lankan road rehabilitation projects where such a tool is yet to emerge. The REA was designed from the information collected from literature survey, questionnaire surveys of affected communities, field observations and subject experts' interviews. Three actual rehabilitation projects were studied for this purpose. Based on the information first the activities relevant to all the road rehabilitation projects were listed with the assistance received from the field engineers. Then those activities which have no significant impacts were taken out keeping only the activities causing impacts for consideration. The designed tool in this study is armed with both primary and secondary impacts which can arise from specific activities of road rehabilitation projects as well with proposed mitigatory measures which can minimize these impacts. The REA is not only comprehensive but also user friendly as activities and impacts are predetermined and linked to each other so that the users do not have to prepare their own checklists of activities or environmental aspects. It's handy and small. It's general in usage and could be used in any site of road rehabilitation projects. It's concise as only those activities with significant impacts are chosen and included.

From surveys it was also discovered that to avoid unnecessary oppositions and social commotion, which would hinder the rehabilitation projects compensation should be decided and granted at the planning stage itself. It is also highly recommended that a strong monitoring system is utilized. If any of the proposed mitigatory measures is not effective in neutralizing the impacts, a search for new measures is recommended and REA is to be updated accordingly. As REA is not available for road rehabilitation projects at present in Sri Lanka the tool designed in my study could be taken for future road rehabilitation projects to minimize the disadvantages of EIA. However, it should note that the REA is to be used only by experts in order to be effective and accurate.

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#### Elevation of earthworm biomass by organic cultivation practices: Long-term evidence from tea soils

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Agrochemicals used in conventional agriculture affect soil fauna and flora while organic management i.e. organic matter incorporation, mulching and avoid of synthetic chemicals etc. favor natural soil inhabitants. Amongst them, earthworms are the most effective bio-indicators which signify structural, microclimatic, nutritive properties and health of agricultural soils. Data were generated from soils of the on going 'TRI-ORCON' trial set up at St. Coombs estate of the Tea Research Institute of Sri Lanka, Talawakelle. Using standard size quadrates, the number and weight of earthworm eggs and earthworms from 0 – 15 and 15 – 30 cm soil depths were determined at 10 years after exposure to organic and conventional systems with tea waste, neem oil cake and compost applications and synthetic agro-chemicals respectively. The earthworm biomass was significantly ( $p < 0.05$ ) superior in organically maintained soils than that of the conventional. Earthworm activity was significantly diminished due to synthetic fertilizers and pesticide use; earthworm eggs in the 0-15 cm and 15-30 cm layers were 0 and  $40 \times 10^3$  per ha while compost application exhibited  $64.8 \times 10^3$  and  $200 \times 10^3$  per ha respectively. Amongst organic amendments, neem oil cake due to its wormicidal effects and oily and cloggy nature lowered earthworm biomass in the 0 – 15 cm layer of which the effect was similar to conventional. The higher aggregate stability in the organically maintained soils with macro pores developed through earthworm burrows showed strong relationship with the earthworm activity. Therefore, our results confirm the immense potentials of organic management practices in developing biological and physical parameters through burrowing, loosening of soil, recycling of nutrients and organic matter in deeper soil depths by earthworms and their castings. Resultantly, organic agricultural systems act as analogue forest conditions with activated and conserved native soil biodiversity components assuring long-term sustenance in crop productivity.