The study aimed at generating information on key decision points that could facilitate PES (Payment for Ecosystem Services) in India with specific focus on the urban water supplies and hydrological services of the forest. Keeping in mind the confusion amongst the scientific community regarding the ability of forest and afforestation programmes to provide “hydrological services” and “headwater conservation function”, the research not just focused on valuation of forest watershed services and policy relevant issues but also on the science of the ecosystem services and forest management in the identified watersheds of the Western Ghats. Socioeconomic survey was conducted to understand the dependence of locals on the forests and assessment of the ways in which the communities are likely to participate in future forest conservation. Modified TroFCCA framework was used to bring out the interlinkages at local level between the variables forest cover (all lands with tree cover of canopy density of 10% and above when projected vertically on the horizontal ground with minimum areal extent of one Ha) and (a) surface water quantity, (b) surface water quality and (c) cost of supplying drinking water, estimating the cost of conservation through PES approach for drinking water supplies to Greater Mumbai and testing its efficiency through cost effective analysis. The information thus generated was used to identify appropriate forest management practices, financing mechanisms, institutional arrangements and policy drivers that could promote an efficient PES mechanism.

Importantly, the research brought out contrasting responses of the old forests (primary forest, mature secondary forest and undisturbed mature plantations) and the mixed forests (disturbed forests and to a lesser extent naturally occurring open forest) on both water yield and water quality. While, the old forests were observed to
significantly increase \((p < 0.05)\) runoff coefficient as also improve water quality, the mixed forests were observed to reduce runoff coefficient and deteriorate the observed water quality parameters except turbidity and total suspended solids (TSS). Tradeoffs between the provisioning services and hydrologic services of the forest were apparent. Deforestation induced costs at the Panjrapur treatment plant of the Mumbai Municipal Corporation were estimated to be 64.96 Indian rupee/m\(^3\) treated water/ha/year (1.32 USD/m\(^3\) treated water/ha/year) which translated to 3.73 million Indian rupee/year (0.075 million USD/year) in 2010-11 prices. Nearly 99% of the increase in the deforestation induced costs was on account of increases in the treatment costs. Costs of Payment for Watershed Services (PWS) worked out to be 6270.94 INR/Ha/year (127.3 USD/Ha/year) at 4% discount rates which when compared to business-as-usual scenario was very high. But bundling of watershed service with other services made it nearly a cost effective proposition.