FUTURE PROSPECTS

The present study, although not in true sense a baseline, yet, may serve so, for monitoring the impact of engineering interventions for the future. Environmental impact assessment of ecological indices with proper planning and time bound evaluation is necessary. The following significant issues need further probe/actions for posterity:-

- The design of the engineering interventions to be set up in an area should be based not only on the hydrological and structural data but also due importance ought to be given to the vegetation density and plant types available with a support of adequate periodic monitoring.

- Civil engineers in coordination with environmentalists and foresters should be brought at some common platform for regular evaluation, planning, action and mid-term corrections, if necessary.

- Periodic evaluation of the vegetation as conducted in the present study needs to be continued further for preparing a long-term conservation strategy. The study though made complete in technical terms, requires to be continued further for a real assessment. Ecological research is of unique type, which in real sense needs long term monitoring and resource budget allocation.

- Some permanent quadrats for vegetational analysis need to be established for periodic long-range assessment of the area.

- In addition to vegetation, other biotic factors—insects, birds, reptiles etc need to be brought under focus.
• Energy inputs in the form of cooking gas or biogas plants, vermicomposting apart from family welfare and education programmes must go hand-in-hand for the improvement of life support systems.

• The engineering interventions especially the small check dams which are clogged or filled with silt, need urgent repair / cleaning, for sustenance.

• The Shiwaliks, being a fragile ecosystem, show dynamism in quick changes in vegetation structure. With the invasion by the new species, the plant diversity and the associated faunal dependence change. Therefore, a regular vigil of the area can lead us to some tangible conclusions.

• As far as possible, exotic species should not be allowed to invade/introduced in the area to save the native biota.

• The rate of productivity in terms of growth of trees, shrubs and herbs and the increase in the number of herbivores and carnivores in the 3 study areas need to be studied.

• Faunal diversity, especially insects, birds, aneledes, reptiles and mammals too need to be monitored for better ecological impact assessment.

• The hydrological state of the soils of the area too needs to be monitored regularly.

• The residents need to be educated because the older generation that was involved in the management of the area has either died or become too old to continue. The younger generation, that has not seen the hardships, lacks the interest because of their ignorance of desirability of conservation of their land and water resources. So, proper environmental education for all sections of the society is also the need of the hour.