Chapter- 6 Conclusions and recommendations

The overall result of the of impact study of highland agriculture with reference to macrozoobenthos, carried out over nine months successfully showed that the benthic community richness as a measure of biological parameter indicated that the stream A , flowing nearby agricultural field were under more ecological stress compared to the other stream B. The significant differences in faunal groupings between the two streams were attributed to various environmental factors related with family richness.

Hydrological parameters did not show direct impact on stream dwelling macrozoobnrthos. Seasonal variation were seen more prominent in both the streams. The inefficiency of the physico-chemical parameters to show any impact on benthic community despite of variation of some key parameters like nitrate, ammonia and phosphorous at toxic level were attributed to insufficient samplings over time and space.

Detection of organochlorine pesticide in comparatively higher concentration in the sediments of stream A was taken as possible inpact that can result from intensive use of pesticides near by agricultural field.

Differences in substrate composition was found as a major factor resulting in significant differences in faunal groupings in between the two streams. This was directly attributed to habitat destruction in the stream flowing nearby agricultural field.

The increasing conductivity in the rainy season was taken as an indication for sedimentation load as sediment particle contribute to the ionic exchange capability of the stream water.

Statistical approaches using multivariate techniques were recognized as possible tool to investigate impact study as such. The subset of environmental factors derived from multiple regression can be taken as a foundation for future study.

For present study ,the major concern of loss of benthic community should not be considered in terms of aesthetic or scientific values of individual species only but rather total effect on the ecosystem of a change in the biotic community should be taken into consideration. Therefore, in order to prevent environmental degradation and loss of benthic macroinvertebrate community in the same or other stream with similar problem, following suggestions are made for considerations.

1. Further monitoring programmes to confirm the established hypothesis.
2. Imply the buffer zone system along the streams.
3. Rehabilitation of physical habitat is suggested as restoration measure for experimental stream A.