Conclusions

Floods (currently the most frequently registered type of natural hazard) are considered to have mostly negative and therefore important effects on society. Every risk is based on factors coming from three main components: *Hazard*, *Exposure* and *Vulnerability*. Throughout human history, changes have occurred within the *Hazard* component. However, changes with a greater level of significance have happened and are happening on the *Exposure* and *Vulnerability* fronts. Insurance against flood losses is an effective way of distributing the adverse risks of flooding. Reinsurance is just another stage within the risk transfer. Flood Loss modelling for reinsurance purposes estimates possible losses in the form of a Loss Exceedance Probability Curve and needs a highly interdisciplinary approach.

Using GIS and statistical analysis tools and with the support of various datasets a methodology for creating a series of flood extents (including a software solution) for different recurrence intervals was proposed. Employing techniques described in this thesis, a set of stochastic events can be generated and the losses associated with them calculated. A methodology dealing with the Off-floodplain losses estimation has also been developed. The methods introduced have been applied in real cases and have been used in the current insurance market for several years.

The long term goal of developing flood models is the mitigation of future flood losses. This can be achieved through a better understanding of the flood loss occurrence process and using such information to instigate loss reduction measures. Taking into consideration an increasing trend in the volume of flood *Exposure* and degree of *Vulnerability*, this effort should be a goal of all those involved in the sector.