EXECUTIVE SUMMARY

The present investigation gives first-hand information on the floristic structure, community composition, anthropogenic pressure and status of various rare, endemic and valuable plant taxa of the Banas river corridor during the year 2008 to 2012.

Biodiversity is a term that is rapidly gaining momentum in the scientific fields. The word ‘biodiversity’ is an abbreviation of biological diversity (Rosen 1985). The elements of biodiversity that are studied and protected by the conservationist can be envisioned at many different levels. We could also analyze the various definitions of biodiversity, which are most commonly employed with respect to the ecosystem, the species and the genes.

The main criteria for the study was based on the hypothesis that the habitat destruction, various human pressure, overexploitation of the biotic resources, mining pressure, livestock grazing, introduction of exotic species as a result of human activities in the area over a period of ten decades, might have caused decline or shift in the species composition in the area. In order to investigate, the whole were divided into four ecozones. Further qualitative and quantitative analyses were made taking into account of abiotic and biotic factors. The abiotic factors included the climatic and edaphic factors while biotic factors dealt with the floristic diversity, the bioresources and the biogeography of the plant species.

The work begins with the introduction of biodiversity, status of biodiversity, India's Floral Biodiversity in Global context, Biodiversity status-Gujarat specific, Threatened species, Centre of origin and diversity, the aims and objectives of the survey undertaken and finally the hypothesis set forth.

In Chapter-2, the background of the region, and the details of research site, covering general climate, vegetation, methodology of the research work has been dealt.

Chapter-3 deals with a review of the floristic diversity in Global context, research carried out for measuring diversity at the Country level and research conducted for the State level regarding measuring floristic diversity of revirine corridor, economic and ethno-botanical use of plants, floristic catalogue of the specific regions and recognition of ecozones.

Chapter-4 described observation of the areas which includes biogeographical distribution of the species in the World and in India with specific reference to Gujarat taking into consideration the Floristic regions, the species diversity, and Floristic composition, population structure (Density and Frequency, Abundance), the species richness and species evenness, genetic diversity and the wild relatives of the cultivated plant species.

Chapter-5 described overall results of the area as described here. The flora of the Banas river corridor accounts 520 plant species of which 105 plant species have expanded their range within the area under human influence either as naturalized Indian Species or area non-
Indian origin (exotic species) consisting of 85 exotic species forming a diverse group in terms of their taxonomic composition and geographic origin. Most of the species are litter from Asia (36.92%), America (22.88%) and Africa (20.38%) which conclude that the species range size distribution differs between naturalized Indian and exotic species, the latter on an average being more widespread within a span of ten decades.

A total of 520 species covering 130 trees and shrubs, 149 herbs, 62 grasses and 45 climbers & twinners were recorded from different plots and habitats in wild while rest numbers of species were recorded as cultivated and ornamental plants. Four dominating trees in the plots were *Butea monosperma, Prosopis juliflora, Acacia nilotica and Wrightia tinctoria* collective contributing more than 60% of the total density. The stand density and species richness decreased with increasing tree girth. The species diversity (Shannon diversity) was highest among herbs (3.40) followed by trees & shrubs (2.56) while the lowest diversity was in twinners & climbers (1.10) followed by grasses (1.64). Chapter also explains about the genetic diversity and the wild relatives of the cultivated plant species.

The studies also confabulates that the vegetation of the *Banas* Corridor is an intimate resources of direct and indirect value too. There are 520 plant species occurring in this region, of which, 30 species are used for various purposes. There are 41 species used for fruits & seeds purpose, 32 species are timber plants, 31 species used as vegetables and rest the species are used for other purposes.

Further, there are 14 plant species, which are the wild relatives of cultivated plants. This justifies the hypothesis that, there is a gradual change in the species morphology over a period of time. The qualitative and quantitative inventory of flora of *Banas* corridor reveals the high plant species diversity.

Last chapter deals with the possible repercussions of the biodiversity loss and conclusive remarks.