The pool of genetic diversity, are now either extinct (e.g. the auroch, seems to be the wild ancestor of cattle) or low in number and threatened by extinction. It has been established that 1 to 2 breeds of domesticated populations are being lost every week from the world. Out of around 6300 global registered breeds, around 1350 are on the verge of extinction or already extinct. Genetic diversity of cattle is threatened by different means like diseases, wars, urbanization, global warming, intensification of agriculture, global marketing and cross breeding.

In India, the population of pure cattle breeds like Sahiwal, Gir, Tharparkar, Red Sindhi, Kankrej, Ongole, Deoni and Krishanavalley is reducing day by day. On the other hand, the cattle breeds like Siri, Punganur, Malnad, Gidda, Vechur, Bargur, Umblacherry and Alambadi are under threat of extinction.

The Siri cattle breed is the only cattle breed of West Bengal and Sikkim. But this cattle breed was unnoticed in West Bengal for last 20-30 years. Many researchers tried to search Siri cattle in the hilly areas of Darjeeling but failed. It was apprehended that Siri cattle were lost from West Bengal due to crossing with local and exotic cattle breed. In 2008, some Siri-like cattle were noticed in the remotest hilly areas of Jalpaiguri and Darjeeling Districts which are not connected by road and inaccessible by vehicles. After thorough searching and comparing with Siri cattle of Sikkim, the existence of this breed in West Bengal was confirmed and documented through newspaper reports to draw the attention of competent authority for conservation. Siri cattle are well adapted to steep slopes of hills, chilly weather conditions and heavy rainfall. Most of the farmers of these areas rely on Siri, which are most suitable for intensive agriculture systems.

Improved transportation, artificial insemination and mechanization in agriculture are the main cause for reduction of the effective population size of Siri cattle breeds. Another cause of genetic erosion of livestock like Siri cattle is a failure to accept and appreciate the value of locally adapted breeds. However, this irreparable loss on the local or the global biodiversity

remains undocumented. For long, the main concerned was production-oriented performance of cattle breeds which was detrimental to the less productive breeds. However these breeds carried important genetic characters like disease resistance, local adaptation, high fertility and unique product qualities. Adaptive traits of cattle may also be rapidly lost due to poorly designed crossbreeding program leading to dilution of cattle germplasm. Crossbreeding with more productive breed destroyed the specific features of an indigenous breed. It is already too late for many cattle breeds in India where rapid changes occurred in the animal husbandry system leading to the replacement of local breeds through direct or indirect ways (crossbreeding).

Only a few works regarding phenotypic characters of Siri has been done. But study of cytogenetic characters and molecular characterizations based on mitochondrial DNA of Siri cattle are not yet done. Therefore, there is an urgent requirement of thorough documentation of diversity of Siri cattle genetic resources to design the scientific strategies for conservation of particular breed. To put this plan into practice, extensive study regarding phenotypic, cytogenetic and molecular characterizations with different powerful statistical approaches has been done in this research work to provide new opportunities for the conservation and management of Siri cattle.