The current adequacy of water supply in Kenya is analysed in order to project future demands and problems that are likely to occur by the year 2000. In discussing the physical background, it is noted that the climatic conditions are influenced by the equatorial location and the monsoonal system of the Indian Ocean. Water availability and quality as well as the drainage pattern depend on the geology of an area. Six major physiographic regions determine the distribution of surface water. Consideration of water supply includes contemplation of: types of water supply projects; expected benefits of piped water supply; and factors that control the level of water supply service. The distribution of surface and ground water resources is outlined. One of the main reasons that planners give for choosing a surface water project over groundwater is the cost; other advantages are identified. Following the assessment of future trends in water supply in Kenya it is concluded that the government's objectives of providing piped clean water to every household within a sensible distance and food security may be achieved by the year 2000. However, the population growth rate needs to decrease from 3.7% to less than 3.2% *per annum.* The rate of economic growth must be sustained at its present level of between 5%-6% *per annum.* Heavy public expenditure in water would result in less expenditure on health, famine relief and the social services.