SUMMARY

González H. C. 2006. Identification of forests and agroforestry systems important suppliers of ecosystems services for the drinking water sector in Nicaragua. M.Sc. Thesis, CATIE, Turrialba, CR, 135 p.

Water resources are considered an essential component in the economic growth and social development of nations. The tropical forests and agroforestry systems play a very important role in the regulation of water flow and quality. In the context of climate change and utilizing a method that examined the interaction between these ecosystems and society, we identified the areas of forest and agro forestry that are important in the provision of potable water for Nicaragua. This method considered criteria of vulnerability of potable water sector, the location of the users, soil use types and the capacity of these soil use types to generate ecosystem services. Utilizing a Geographical Information System (GIS), we created maps of forest ecosystems and agroforestry areas that are important in the provision of potable water and we also determined the area of important forest below the protected areas. The results indicated that approximately 37, 804 km2 and 1,722 km2 of forests and agroforestry systems respectively, are of high to very high importance for potable water sector. The majority of these areas are found in the Central North and Pacific regions, where the highest population densities occur. Most of the agroforestry systems in the Central North region coincide with an important coffee growing zone of the country. There are approximately 7600 km2 of important forest located in protected areas, which represents 20% of the total area of protected forests. For the decision makers, this study constitutes an instrument of analysis that can contribute to the design and implementation of adaptive management strategies for forests and agroforestry systems, which must consider the relation between society and these ecosystems with the purpose of guaranteeing their permanence and the ecosystems services that lend to the society.

Key words: forests, agroforestry systems, ecosystem services, potable water, society.