In Argentina, the use of biomass for the production of biofuels capable of replacing fossil fuels has aroused great expectation. In the last decade, the production of biodiesel has tripled, and the rising trend continues supported by national legislation that soon will increase the blend mandates up to B20 and E25 (being now B10 and E12). However, there could be some environmental concerns associated with land use and especially with water use. In this chapter, we calculate the volume of water used and consumed in the production of rapeseed (Brassica napus) and soybean (Glycine max) for biodiesel, and the production of sugarcane (Saccharum officinarum) and cordgrass (Spartina argentinensis) for bioethanol in different regions of the country. The water footprint, as defined by the Water Footprint Network, is used as an indicator of water resources appropriation, and the ISO approach is followed to assess the impacts associated with the use of water. The volume of water associated with the production of cordgrass is lower than figures obtained by traditional sources of biomass in Argentina (soybean and sugarcane). Soybean is produced in the Pampean Region and it is recommended to optimize the management of water resources in that region to minimize competition with food products while on the opposite, there is the case of Spartina that is a native grass growing naturally in the Chaco Region and it uses water that does not compete with food or livestock feed. On the other hand, rapeseed has a high water footprint mainly as a consequence of the site where it is produced. For instance, considering the environmental fragility, it is recommended to avoid the production of biomass destined to bioenergy in the arid zones of the country. Therefore, our findings show that results are more dependent on the region where each biomass is grown, than on management practices or the amount and type of chemical inputs (fertilizers, pesticides). Further work, such as the accounting of water along the industrial phase of the biofuels, is needed to have the full picture of the water consumption issue in bioenergy production.