Coastal aquatic ecosystems are increasingly affected by diffuse source nutrient water pollution from agricultural activities in coastal catchments, even though these ecosystems are important from a social, environmental and economic perspective. To warrant sustainable economic development of coastal regions, we need to balance marginal costs from coastal catchment water pollution abatement and associated marginal benefits from coastal resource appreciation. Diffuse-source water pollution abatement costs across agricultural sectors are not easily determined given the spatial heterogeneity in biophysical and agro-ecological conditions as well as the available range of best agricultural practices (BAPs) for water quality improvement. We demonstrate how the Soil and Water Assessment Tool (SWAT) can be used to estimate diffuse-source water pollution abatement cost functions across agricultural land use categories based on a stepwise adoption of identified BAPs for water quality improvement and corresponding SWAT-based estimates for agricultural production, agricultural incomes, and water pollution deliveries. Results for the case of dissolved inorganic nitrogen (DIN) surface water pollution by the key agricultural land use categories ("annual crops," "vineyards," and "mixed annual crops & vineyards") in the Vouga catchment in central Portugal show that no win-win ("annual crops," "vineyards," and "mixed annual crops & vineyards") surface water pollution by the key agricultural land use categories delivers. Estimated abatement costs increase quadratically in the rate of water pollution abatement, with largest abatement costs for the "mixed annual crops & vineyards" land use category (between 41,900 and 51,900 € tDIN\(^{-1}\) yr\(^{-1}\)) and fairly similar abatement costs across the "vineyards" and "annual crops" land use categories (between 7300 and 15,200 € tDIN\(^{-1}\) yr\(^{-1}\)).