The need to adopt strategies to minimize loss of nutrients from agricultural land has increased greatly as a result of diffuse contamination. The measures taken must be based on the results of studies of the changes in each nutrient in soil and water, and of studies of the transport mechanisms and the effects of different agricultural practices. More detailed studies must therefore be carried out in smaller areas, and should include analyses of soil and water. The river basin considered in the present study is located close to the Fervenza reservoir (Galicia, NW Spain) and includes Fonte Espiño and Rego de Abellas, both tributaries of the river Xallas.

The influence of agricultural practices on the risk of P loss in the river basin and whether such practices generate a risk of eutrophication in the water bodies as a result of modification of the P index were investigated.

The source factor was determined by quantification of the extractable P, of the degree of P saturation and of molybdate reactive P (MRP) desorption. Taking into account the particular characteristics of the river basin, components related to connectivity, distance, degree of run-off and degree of erosion were considered in calculating the transport factor.

The importance of transport factors (usually very low) was evident in the river basin, as low P index values were observed in soils with high and even very high values in the source factor. In general in the river basin, the risk of movement of P to the water is low, especially in areas where forest soils and natural grasslands are common. Confirmation of the low P index values was provided by the low concentrations of P (total and MRP) in the rivers.