# Development of a risk indicator of contamination of superficial waters by pesticides. application to Itajai catchment – Brazil

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In the process of management of water resources in Europe as in Brasil, managers need to support their decisions and diagnose the environmental risks related to non-point pollution due to agricultural activities. Environmental risk indicators seem to be efficient tools to help water managers because they are developed from available variables, easily calculable and interpretable. Within this context, a risk indicator of contamination of surface waters by pesticides was developed. It considers factors such as slope, distance between plots and hydrographical network, type of soil and pressures resulting from the land use. Pressures are represented by the risk of contamination associated to different pesticide molecules used on the main cultures. Application of the indicator was held on the Itajai catchment, situated in the south of Brazil. This basin of 15 000 square kilometres, presents urban, industrial and agricultural activities. Natural forests and agriculture areas cover respectively about 54% and 37% of the whole basin. The agricultural activities present high level of productivity and it has great importance in the regional economy. The main cultures are rice, corn, tobacco, beans and banana. Available spatial data are digital elevation model, types of soil, land use and land cover obtained by treatment of LANDSAT TM 7 images (pixel 30 x 30 m, of the year 2000). The main pesticides molecules were classified as to the environmental risks, by the French method SIRIS. The objective of the paper is to discuss, for the development of each factor, the availability and the precision of the data, and finally the pertinence of the developed indicator. The paper concludes with the conditions of transferability of European methods to Brazilian context.