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The assessment of river basin and flood management from early twentieth century to the present on the lower Siret River (Romania)

F. Salit (1), B Beltrando (1), and L Zaharia (2)

(1) Paris diderot paris cité, France (florence.salit@gmail.com), (2) Faculté de Géographie, Université de Bucarest

The river basin management and flood depends on the politico-historical, economic and environmental context in which it is thought. There is a similar evolution in Romania, where political developments have had as much impact on flood management than hydro-climatic events. The aim of this work is to understand of management systems in a diachronic logic in Romania from the beginning of the 20th century to the Communist period and to accession to the European Union.

This work focuses on the lower Siret River. The Siret catchment is one of the last major tributaries of the Danube River east of the Carpathians and the most important of Romania in terms of flow and drainage area. To study the assessment of river basin management, a GIS was constructed using a series of Romanian and Russian topographic maps extending over the period 1916-1990 and Google earth images from 2009 and 2010. The study of the current period was enhanced by field observations (records of existing dykes, testimonials ...) from 2010-2011. Finally, this study is based on the technical literature for the regularization of rivers and the various reports made over this period.

Three periods were identified: the major floods of 1970 and 2005 marked a turning point in the logical management of river basin and especially in the fight against flood. From the beginning of the period to 1970, dyke protection was sporadic: they are intended primarily to protect the villages directly threatened by recurrent flood. In 1970 a major flood (3500 m3/s) occurred on the lower Siret and other minor floods in succession from 1970 to 1975. By 1976 a national plan was drawn up to fight against the harmful effects of water. The entire sector of the lower Siret River and its major tributaries is arranged, a network of levees protects not only the villages but also all economic assets in this sector, namely the agricultural land, the main wealth of the region. In 2005 an exceptionally large flood (4650 m3/s) affected the lower Siret River, making a dozen victims on the sector and millions of lei of damage. This flood has highlighted the faults and defects of the previous protection system: brittleness of levees, channelization of sections of the river ... In the context of accession to the European Union and the implementation of the EU Water Framework Directive and the EU Flood Risk Management Directive, new arrangement plans are being studied: reorganization of the network of dykes, application of the principle of cost/benefit for the localization of dykes.