Geophysical Research Abstracts,
Vol. 11, EGU2009-9068, 2009
EGU General Assembly 2009

Watershed basin management and agriculture practices: an application case for flooding areas in Piemonte.

G. Bianco (1), L. Franzi (2), and U. Valvassore ()

(1) Politecnico di Torino, Dipartimenti di Idraulica, Trasporti, Infrastrutture civili, Italy (gennaro.bianco@polito.it), (2) Regione Piemonte, Public works, soil defence, Italy (luca.franzi@regione.piemonte.it)

Watershed basin management in Piemonte (Italy) is a challenging issue that forces the local Authorities to a careful land planning in the frame of a sustainable economy. Different and contrasting objectives should be taken into account and balanced in order to find the best or the most "reasonable" choice under many constraints.
Frequently the need for flood risk reduction and the demand for economical exploitation of floodplain areas represent the most conflicting aspects that influence watershed management politics. Actually, flood plains have been the preferred places for socio-economical activities, due to the availability of water, fertility of soil and the easiness of agricultural soil exploitation.
Sometimes the bed and planform profile adjustments of a river, as a consequence of natural processes, can impede some anthropogenic activities in agriculture, such as the erosion of areas used for crops, the impossibility of water diversion, the deposition of pollutants on the ground, with effects on the economy and on the social life of local communities. In these cases watershed basin management should either balance the opposite demands, as the protection of economic activities (that implies generally canalized rivers and levees construction) and the need of favouring the river morphological stability, allowing the flooding in the inundation areas.
In the paper a case study in Piemonte region (Tortona irrigation district) is shown and discussed. The effects of the Scrivia river planform adjustment on water diversion and soil erodibility force the local community and the authority of the irrigation district to ask for flood protection and river bed excavation. A mathematical model is also applied to study the effects of local river channel excavation on flood risk. Some countermeasures are also suggested to properly balance the opposite needs in the frame of a watershed basin management.