

Goal of Approach:

Combination of structural and non-structural (bioengineering) measures for reduction of risk from flooding/flash flooding

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Main elements of the implementation strategy

1. Creation of maps of flooding/flash flooding-exposed areas along the river-basin;
2. Identification of concrete locations and measures (structural (bank fortification, reservoirs), bioengineering measures (plantations, bank terracing, vegetative buffers, bundles and tree revetments) to reduce the risk of flooding/flash flooding with optimal cost-effectiveness;
3. Identification of additional measures (legal regulations, building codes, insurance schemes, changes in agricultural practices, awareness-raising campaign etc) to complement the concrete structural and non-structural measures for reducing the risk;
4. Establishment of early warning system for flooding/flash flooding in the river-basin;
5. Implementation of the measures.

Targeted beneficiaries

Inhabitants living along the river banks are key beneficiaries from this approach as they will be protected from seasonal floods and non-seasonal flash-floods from the river and its tributaries. Economic damage/human lives losses will be significantly reduced.

Any significant lessons learned

Common practices of river banks fortifying works are less and less effective against CC-related frequent flood/flashfloods. In addition to changes in rainfall patterns, trending towards heavier and longer precipitation, glaciers melting in high mountains (The Caucasus in Georgia's case) causes additional risk of water abundance in rivers taking origin in the mountains, and the risk of overflowing the banks. Fortification of the banks is often little protection and even augments the impacts of flooding.

Complex approach with adding non-structural measures with appropriate legal and awareness-raising measures is needed to reduce the risk of damage and losses from flooding/flash-flooding.

Resource requirements

Hydro-meteorological equipment's (stations, radars, labs with qualified specialists), database are needed. Hydro-meteorological agency should make scientific management and municipalities involved can organize the works using construction firms and local inhabitants in works. Local/regional or national/international resources can be raised for

financial support.

Potential for replication or scaling-up

Hydro-meteorological equipment (radar) and EWS installed for one river may be applied for neighboring rivers basins too. The experience may be easily replicated making just specific alterations regarding maps and concrete measures.

Including the approach in national plan(s) for flood/flashflood-related disaster risk management may substantially facilitate fund-raising from international sources of funding.

For Any additional information

Combined approach for flood/flashflood risk reduction may also stop land degradation along the rivers and plantation of trees as an adaptation measure will have substantial contribution to GHG emission reduction too. Thus, the approach can have both CC adaptation and mitigation effect.