



SAVREMENI PRISTUP ODBRANI OD BUJIČNIH POPLAVA CONTEMPORARY APPROACH OF FLOOD CONTROL

REZIME

Katastrofalne poplave u Srbiji, u maju 2014. godine, obuhvatile su uglavnom manje vodotoke, sa bujičnim karakterom hidrološkog režima. Osnovni uzrok poplava su bile ekstremne padavine, koje su imale probabilistički rang preko 1% (stogodišnje verovatnoće pojave), a na nekim slivovima 0,1% (hiljadugodišnje verovatnoće pojave). Međutim, pored prirodnih činilaca, na razmere poplava su uticali i antropogeni faktori – nepotpuni sistem za zaštitu od velikih voda i neodržavanje regulisanih rečnih korita, kao i naseljavanje u plavnoj zoni vodotoka. U radu se razmatraju mogućnosti kontrole bujičnih poplava, uvođenjem savremenog pristupa odbrani od velikih voda. Ovaj pristup podrazumeva determinisanje potencijalnih plavnih zona pored vodotoka i izgradnju sistema za ranu najavu bujičnih poplava.

Ključne reči : poplave, bujični režim, prirodni i antropogeni faktori, rana najava poplava

RESUME

Catastrophic floods in Serbia, in May 2014, included mostly smaller streams with torrential character of the hydrological regime. The main cause of the floods was extreme precipitation, which showed a probabilistic ranking of more than 1% (one hundred years of the probability of occurrence), and in some basins 0.1% (millennial probabilities). However, in addition to natural factors, the scale of the flood was affected by anthropogenic factors - incomplete system for flood protection and lack of maintenance of regulated river beds, as well as settling in the flood zone of rivers. This paper discusses the possibility of torrential flood control, introducing contemporary approach to defending from high waters. This approach involves determination of potential flood zones along watercourses and the construction of early torrential flood warning systems.

Keywords: floods, torrential regime, natural and anthropogenic factors, early flood warning systems

UVOD

Katastrofalne poplave u Srbiji, u maju 2014. godine, obuhvatile su manjim delom velike reke (Savu, Drinu, Veliku, Južnu i Zapadnu Moravu), a većim delom manje pritoke ovih vodotoka (Kolubaru, Tamnavu, Jadar, Jasenicu, Crnicu i dr.). Svi pomenuti i ostali manji vodotoci u Srbiji imaju bujični karakter hidrološkog režima. Na slici 1 je prikazana hidrografska mreža vodotoka na teritoriji Srbije, na kojoj su posebno naznačeni vodotoci sa bujičnim hidrološkim režimom. Karakteristike bujičnih poplava se manifestuju kroz specifičnu dinamiku bujičnih fenomena, karakterističnu genezu i brzu koncentraciju velikih voda u rečnim slivovima. Otuda nije moguća primena klasičnih hidrotehničkih principa i metoda odbrane od poplava. Nagli nadolazak i kratko trajanje velikih voda najčešće ne ostavljaju dovoljno vremena ni za proglašenje odbrane od poplava (koja nikada ne može biti redovna, već samo vanredna). Nažalost, kod nas se u većini bujičnih poplava ne preduzimaju nikakve mere aktivne odbrane, već se sve svodi na pasivno saniranje posledica poplave.

INTRODUCTION

Catastrophic floods in Serbia, in May 2014, included the lower part of the large rivers (Sava, Drina, Velika, Juzna and Zapadna Morava), and a major part of the smaller tributaries of these streams (Kolubara, Tamnava, Jadar, Jasenica, Crnica and others). All the above and other smaller rivers in Serbia have torrential character of the hydrological regime. Figure 1 shows the hydrographic network of waterways on the territory of Serbia, with a specially designated streams with torrential hydrological regime. Characteristics of torrential floods are manifested through specific dynamic of torrential phenomena, characteristic genesis and rapid concentration of high water in river basins. It is therefore not possible to use conventional hydro-technical principles and methods of flood control. The sudden advent of the short duration of high water usually does not leave enough time for flood protection (which can never be regular, but only emergency). Unfortunately, in our country there are no active defense measures and it all comes down to passive remediation of flood consequences.

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