



## POUKE POPLAVE 2014. GODINE LESSONS LEARNED FROM THE 2014 FLOOD

### SAŽETAK

Vrlo intenzivne i dugotrajne kiše u maju 2014. godine zahvatile su veliki deo Srbije, pri čemu je njihov intenzitet opadao od zapada prema istoku. Zemljište zasićeno kišama koje su pale u drugoj polovini aprila i početkom maja nije moglo da prihvati dodatne količine vode, te je oticaj vode bio izuzetan. Najpre su nabujale manje reke, na kojima su se javile izuzetno velike brzine tečenja, masovno kretanje rečnog nanosa i pokretanje klizišta. Na rekama srednje veličine, kao što je Kolubara, javila se izuzetno velika voda, pod čijim pritiskom su na mnogim lokalitetima popustili objekti za zaštitu od poplava. Na reci Savi su se javili izuzetno visoki nivoi vode usled pojave velikih voda na svim desnim pritokama u Hrvatskoj i BiH, a sistem zaštite je, iako na granici izdržljivosti, odoleo zahvaljujući velikim naporima stručnih službi i uz pomoć vojske i građana.

Trenutno je sistem zaštite od poplava u Srbiji u fazi sanacije. Međutim, kao i posle svake velike poplave u prethodnim decenijama, treba pokrenuti proces rekonstrukcije i unapređenja, kako bi naredni događaji ove vrste bili spremno dočekani.

**Ključne reči:** karakteristike katastrofalnih poplava u Srbiji, opravdana zaštita od poplava, uzrok i štete od poplava

### SUMMARY

Prolonged heavy rainfall hit a large part of Serbia in May 2014. Rainfall intensity decreased from the west to the east. The ground saturated with rain in the latter half of April and early May could not absorb additional water and this resulted in considerable runoff. The first to swell were small rivers, which registered extremely high flow velocities and large-scale sediment entrainment, and activated landslides. Medium-size rivers, such as the Kolubara, measured exceptionally high flows that breached flood defenses in many places. The water levels of the Sava River were also extremely high, as a result of flood waves on all its right tributaries in Croatia and Bosnia and Herzegovina, but the flood protection system, although on the verge of collapse, resisted thanks to major efforts of the emergency response services, aided by the military and citizens.

The flood protection system in Serbia is currently undergoing repair. However, as in the case of each major flood in the past several decades, a reconstruction and upgrading process needs to be initiated to ensure readiness for similar events in the future.

**Keywords:** characteristics of the catastrophic floods in Serbia, reasonable flood protection, flood damage

### 1. UVOD

Poplave se svrstavaju u red najvećih prirodnih katastrofa na globalnom nivou, a na prostoru Srbije često uzrokuju vanredne situacije, praćene štetama, a ponekad i gubitkom ljudskih života.

U Srbiji se u periodu 1965-2011. godine desilo preko 70 značajnih poplava, odnosno poplava koje su na poplavljenom području izazvale štetu čiji iznos prelazi 10% nacionalnog dohotka ostvarenog na teritoriji jedinice lokalne samouprave u prethodnoj godini i imale značajne štetne posledice na zdravlje ljudi, životnu sredinu, kulturno nasleđe i/ili privredne aktivnosti. Poplave su se najčešće dešavale na deonicama

- Floods rank among major natural disasters on the global scale. In Serbia, they often cause emergency situations, damage and at times even loss of life.
- There have been more than 70 significant floods in Serbia from 1965 to 2011. These floods caused damage exceeding 10% of the national income earned in the affected local administrative unit in the previous year and resulted in significant consequences to human health, the environment, cultural heritage and/or economic activity. The floods generally affected the reaches of small rivers without flood defenses, but also protected floodplains due to overtopping or breaching.
- The disastrous flood in May 2014, which was a result

Dr Marina BABIĆ MLADENOVIĆ, direktor Zavoda za uređenje vodnih tokova u Institutu za vodoprivredu „Jaroslav Černi“, Beograd  
Director of the Department for River Engineering at the Jaroslav Černi Institute for the Development of Water Resources, Belgrade

Vasiljka KOLAROV, MSc, vodeći istraživač u Zavodu za uređenje vodnih tokova u Institutu za vodoprivredu „Jaroslav Černi“, Beograd  
Lead Researcher at the Department for River Engineering of the Jaroslav Černi Institute for the Development of Water Resources, Belgrade