

VREMENSKE UJME IN WEATHER DISASTERS AND GEODEZIJA SURVEYING

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V minulem poletju so Slovenijo prizadele poplave, zemeljski plazovi, neurja z nalivi, močnim vetrom in točo. Povzročili so ogromno škodo, številne osebne travme in tudi nekaj žrtev. Odpravljanje posledic bo zaznamovalo prihodnje mesece, na nekaterih območjih zagotovo tudi leta. Morda smo zaradi bližnje ali celo osebne vpletenosti nekoliko manj pozorni na podobna dogajanja v drugih, ne prav oddaljenih državah in območjih. Težko je primerjati obseg škode in posledic, vsekakor pa je bilo v Sloveniji glede na razsežnosti škode zelo malo žrtev, kar najbrž kaže na naš izredno dobro delujoč sistem civilne zaščite, tako pri obveščanju kot pri ukrepanju.

A vremenske ujme so sestavni del naravnega cikla planeta Zemlje. Omogočile so nastanek reliefa, življenja, zaradi njih so med celinami prehajala živa bitja, pripomogle so k nastajanju plodnih tal. Brez njih nastanka in razvoja sveta in življa na njem, kot ga poznamo danes, ne bi bilo. Kljub temu so danes potresi, ognjeniki, viharji, plazovi, požari, suše in poplave naša največja grožnja; so glavne novice, ki jih iz dneva v dan s strahom pričakujemo z različnih koncev sveta. No, tu so še tragedije, ki jih s svojim početjem zakrivijo izključno ljudje, kot so vojne, poboji, a navsezadnje so tudi te nemalokrat posledica boja za naravne vire. Pogosto se zalotimo v prepričanju, kako je naravnih ujm iz leta v leto več, kako so čedalje bolj smrtonosne in kako čedalje bolj vplivajo na naša življenja. En razlog za to je predvsem današnja hitra in vseobsegajoča obveščenost. Fotografije, filmi, zgrožene izjave prizadetih, obljube pristojnih o pomoči v trenutku preplavijo svet, sicer z nekaj več zagona, če je dogodek napočil v bogatejšem delu sveta, predvsem pa na poseljenih območjih. Posledice vremenskih ujm na neposeljenih območjih pogosto opazujemo z zamikom, v dokumentarnih oddajah, ki poljudno prikazujejo, kako se spreminja narava in kako se na to prilagajajo živali in rastline.

Kaj nam to pove? Da ujme in njihove posledice kot tragične dojemamo le iz naše, človeške perspektive, ker zahtevajo spremembo načina življenja, kakršnega smo si vzpostavili, da lahko uživamo čim več udobja. Smo res morali poseliti in zagraditi različna območja rek, nestabilna plazovita območja, jih presekat s cestami, škarpami? Trditev, da je bilo vse to potrebno zaradi izrazitega povečanja populacije vsaj v Evropi zadnja desetletja ne drži. Drži pa, da se poselitev ter z njo infrastruktura in ostali objekti iz nekdaj pred ujmami varnejših selijo na območja, ki so lažje dostopna in omogočajo večje ekonomske učinke, tako pri gradnji kot uporabi. Dokler se ne zgodi ujma.

Vremenske ujme vsekakor vplivajo tudi na geodezijo. Spremembe površja je treba zaznati in evidentirati,

kar se je zgodilo s hitrimi zračnimi snemanji prizadetih območij. Postavljajo se zasilni mostovi, zasilna bivališča, urejajo nujni posegi, vse je treba predhodno izmeriti. Kasneje bo treba načrtovati nadomestne poselitve in poteke cest, komunalnih vodov, katastrsko urediti območja, kjer je nekatere parcele odneslo in jih tudi ne bo več mogoče vzpostaviti na istem mestu. Spremeniti modele vrednotenja na prizadetih območjih in preračunati vrednosti nepremičnin. Geodetska stroka bo z različnimi storitvami vpeta v odpravljanje posledic in obnovo in čeprav v nobenem izmed vzpostavljenih svetov za svetovanje vladi v pri obnovi ni geodeta, bo vloga geodezije neizogibna.

Lahko bi spet potarnali, da bomo zamudili priložnost za prepoznavnost stroke, a da bo stroka zaradi naročil dodatnih storitev vsaj ekonomsko napredovala, a verjamem, da vendarle ne bomo skušali iskati koristi na račun tragedije. Bi pa bilo nujno, da bi poleg aktivnosti pri odpravljanju posledic ujm prevzeli večjo vlogo pri preprečevanju in opozarjanju na prihodnje. Prostorsko planiranje bo moralo trdneje vztrajati pri prostorskih omejitvah ter ne popuščati pod pritiski in interesi kapitala. Inženirska geodezija bo morala v povezavi z geologi in hidrologi spremljati premike več ogrožajočih območij, kar se recimo že uspešno izvaja v Koroški Beli. Zračna (laserska in vidna) snemanja bodo morala prepoznavati neočiščene in s plavjem ter rastjem zatrpane struge hudournikov in vodotokov, neočiščene gozdove in zaraščene preseke, ki pospešujejo širjenje požarov. Tudi kartografi smo bili na nedavnem svetovnem kongresu pozvani, da je naša vloga učinkovito predstavljati in opozarjati, tako prebivalce kot odločevalce, o morebitnih ogroženih območjih in predvidenih obsegih prizadetosti. Dejstvo namreč je, da bodo z vse večjim poseganjem človeka v naravo in z nedvomno prisotnimi posledicami naraščanja globalnih temperatur ujme vse pogostejše in bodo povzročale vse večjo škodo. Letošnje leto je bilo prvo izmed dveh mokrih v dvoletnih ciklih sprememb temperatur v Tihem oceanu, tako imenovanega učinka El Nina, kar lahko v prihajajočem letu prinese težave, podobne letošnjim, nato sledita dve sušni leti, z drugačnimi, a žal najbrž nič manj usodnimi težavami.

Dear Readers of *Geodetski Vestnik*,

In the summer of 2023, Slovenia was hit by floods, landslides, storms with extremely heavy rain, strong winds, and hail. They caused enormous damage, many personal injuries, and some deaths. Dealing with the consequences will define the coming months and, in some areas, even years. Perhaps due to our close or even personal involvement, we pay a little less attention to similar events in other, not very distant countries and areas. It is difficult to compare the extent of the damage and the consequences, but in any case, there were few victims in Slovenia with regard to the extent of the damage. This demonstrates that our civil protection system is fully functioning both in terms of information and action.

Nevertheless, weather disasters are an integral part of the natural cycle of planet Earth. They enabled the development of landforms, life itself; with their help, plants and animals passed between continents, and they helped to create fertile soil. Without them, the creation and development of the world and life on it as we know it would not have happened. Today, however, earthquakes, fires, storms, landslides, fires, droughts and floods represent our greatest threat; they are featured in the news from different parts of the world that we anxiously await day after day. In addition, various tragedies are caused exclusively by people, such as wars and massacres, but ultimately, these are also often the result of the struggle for natural resources. We often believe that natural disasters are escalating every year, that they are more and more deadly, and that they increasingly affect our lives. One reason for this is, above all, today's fast flow of detailed information. Photos, films, horrified statements of those affected, and promises of help from the authorities immediately flood the world. One must admit that the impetus is stronger if the event occurred in a rich part of the world, especially in densely populated areas. The consequences of weather damage in uninhabited areas are often observed with a delay in popular science documentaries that show how nature changes and how animals and plants adapt to changed conditions.

What does this tell us? Disasters and resulting tragedies primarily concern us, human beings, because they change the way of life that we have established for ourselves to enjoy maximum comfort. Did we really have to move to and build up floodplains and unstable landslide areas? Did we really have to intersect them with roads and retaining walls? The claim that all this was necessary due to the marked increase in population has, at least in Europe, proved dubious in recent decades. However, it is true that settlements, infrastructure, and other facilities are moving from once safer areas to easily accessible areas that allow greater economic gains, both in construction and use. Until the first weather disaster.

Weather conditions definitely affect land surveying as well. Changes to the surface must be detected and recorded, which was performed by rapid aerial photography of the affected areas. Emergency bridges, emergency shelters are being built, emergency interventions are being arranged; all of this must be measured beforehand. Later, it will be necessary to plan alternative settlements and alternative routes of roads and utility lines to make cadastral changes where some plots have been washed away and no longer exist, and it is impossible to establish them in the same place. Valuation models in affected areas will have to be adapted, and real estate values recalculated. The surveying profession will be involved in alleviating the consequences and with the reconstruction with various services, and although there is no surveyor in any of the councils established to advise the government on reconstruction, the role of surveying will be inevitable. We could once again lament that we have missed the opportunity for a recognition of the profession but that it will at least reap some financial gains due to the orders for additional services, but I believe that we will not try to seek benefits at the expense

of tragedy. However, it would be necessary that, in addition to activities in eliminating the consequences of disasters, we should take on a greater role in prevention and warning activities.

Spatial planning will have to insist more firmly on spatial limitations and not give in to the pressures and interests of capital. Engineering surveyors, hand in hand with geologists and hydrologists, will have to monitor the movements of several threatened areas, as, for example, it has already successfully been done in the case of Koroška Bela. Aerial (laser and visible) recordings will have to identify which torrent beds and watercourses are clogged with driftwood and growth and need maintenance, as well as overgrown forests that accelerate the spread of fires. Moreover, at the recent world congress, it was pointed out that the role of cartographers is to effectively represent and warn both residents and decision-makers about possible threatened areas and the expected extent of the damage.

The fact is that with increasing human intervention in the environment and with the clearly visible severe consequences of rising global temperatures, disasters will become a common occurrence and will cause more and more damage. This year was the first in the two-year cycles of temperature changes in the Pacific Ocean, the so-called El Nino effect, which may create similar problems in the coming year. It will be followed by two dry years with different but probably no less fatal difficulties.