

## OBNOVA ŠUMA HRVATSKE - JUČER - DANAS - SUTRA

K. POŠTENJAK, Maja GRAĐEČKI

Šumarski institut, Jastrebarsko,  
Odjel za oplemenjivanje i šumsko sjemenarstvo

Čovjek se kao član i jedinka ove planete pojavio vrlo kasno – "nedavno", ali unatoč tome tijekom svoga postojanja kontinuirano mijenja svoj okoliš (kako uži – tako i širi) nepovratno sa negativnim posljedicama. Okolina u kojoj čovjek boravi u pravilu je šumom obrasla, pa iako mu pruža mnogobrojne pogodnosti rastom ljudske populacije šuma mu smeta i on ju na mnogim mjestima krči ("školski primjer" ovakvog ponašanja čovjeka na velikom prostoru su sredozemne zemlje – nekada obrasle vazda zelenim šumama bjelogorice i crnogorice – a zadnje tisućljeće su to goli ili ogoljeli krški tereni nastali devastirajućim i neracionalnim "gospodarenjem").

U prehrani ljudskog roda biljna hrana zauzima prvo mjesto, a tijekom svog postojanja čovjek je izvorne – prirodne oblike usmjeravao prema boljoj kakvoći i količini – osobito ovo zadnje stoljeće pri čemu su nestali mnogi izvorni oblici (nepotrebno je naglašavati da sva ova aktivnost počinje i završava na sjemenu). Međutim čovjek se nije zaustavio na selekciji i oplemenjivanju biljaka, on to radi i sa životnjama, pa čak ide i dalje – ulazi u šumske ekosustave i njih nepovratno devastacijski mijenja – na gore ("školski primjer" su šume Njemačke potpuno izmijenjene krajem 19. i početkom 20. stoljeća kada su sađene kulture crnogorice – smreke i običnog bora u sasječenim ekosustavima bjelogorice. Danas Njemački šumari imaju prosječni direktni trošak obnove i prevođenja tih kultura u nekadašnje bjelogorične šume u visini od 15,000 €/1 ha.

Teritorij Hrvatske zemljopisno pripada dijelom Mediteranu, a dijelom kontinentu srednje Europe; orografski je većim dijelom brdovito, planinsko područje sa prostranom Panonskom nizinom, što sve skupa sa pripadajućim vrlo velikim raznolikostima podneblja definira značajan biodiverzitet (na <5% površine Europe nalazi se > 65% flore Europe). Na ovim prostorima "gospodarski" utjecaj čovjeka je odavna, a na žalost i još danas prepoznatljiv po razarajućim posljedicama po šumske ekosustave. Šumski ekosustavi su vrlo osjetljivi živi mediji koji izrazito senzibilno reagiraju na čovjekove aktivnosti – kako gospodarske (šumarske) tako još izrazitije na ostale (uglavnom destruktivno devastirajuće).

Nizinske šume panonskog dijela Hrvatske (1,050.000 ha) su bile prašumske samo obnovljivi oblici u kojima su tijekom 19. stoljeća izvršene devastacijske sječe i krčenja (posjećeno je iskrčeno % lužnjakovih šuma), a u prvoj polovici 20. st. iz njih je zauvijek nestao nizinski brijest - okosnica stabilnosti tih ekosustava, da bi se na to nastavilo sa globalnim promjenama klime, vodnog režima itd, što je sve skupa rezultiralo nemogućnošću kontinuiteta prirodne obnove i njenom

dopunom (najčešće sjemenom), čije dimenzije je moguće sagledati iz rasta indeksa potrošnje žira zadnjih 45 godina od 100 na 1,500!

Preborne šume dinarskog područja Hrvatske (315,000 ha) imaju gotovo istu sudbinu kao i one iz panonskog područja sa iznimkom krčenja velikih površina, ali je zato ovo područje najviše opterećeno depozicijskim zagađivanjem – kako stranim tako i našim, što je doprinijelo (pored drugih čimbenika) neviđenim sušenjem gospodarski najznačajnije vrste – jele i time vrlo složenom problematikom njene (do jučer prirodne) obnove. Također treba istaći, da je tijekom ovih zadnjih pola stoljeća u staništa jele unijeto > 100 miliona sadnica smreke (te još toliko njena sjemena podsijavanjem) čime je grubo narušen ekosustav ekološko gospodarskog tipa šuma jele i bukve.

Degradirane šume mediteranskog područja Hrvatske (1,050.000 ha) su u najgoroj poziciji – stoljećima izvrgnute devastaciji čovjeka i stoke uspijevaju se još uvijek prirodno obnavljati unatoč još jednoj čovjekovoj namjernoj aktivnosti razornim učincima požara koji kontinuirano pola stoljeća ne samo uništavaju biljni pokrov već uništavaju što je još gore i pogubnije – tlo (ne smijemo zaboraviti da je gospodarenje šumom na kršu najprije racionalno gospodarenje s tlom). Racionalno gospodarenje ovim područjem traži silne materijalno finansijske izdatke (koje šumarstvo nije kadro snositi – društvo ga je izrodilo pa ga treba i sanirati!) u kojima šumsko sjeme ima početnu i odlučujuću ulogu.

Europa nas treba radi naših – relativno još uvijek očuvanih prirodnih resursa, kojima šumski ekosustavi daju nezamjenjivo obilježje i značaj, stoga se i u tom smislu moramo pripremiti za taj trenutak razmišljujući kako i na koji način očuvati od daljnje devastacije nesmiljene profitne trustovske mašinerije "civiliziranog" dijela ljudskog roda djedovinu za naše unuke.

Ključne riječi: šumski ekosustavi, devastacija i prirodna obnova šuma.

## REFORESTATION OF CROATIAN FORESTS: YESTERDAY - TODAY - TOMORROW

K. POŠTENJAK, Maja GRADEČKI

Forest Research Institute  
Department for improvement and forest seed husbandry

Although man, as a member of this planet, appeared very late - "recently", during his existence he has changed the environment irretrievably and with negative consequences. The environment in which he lives is covered by forest, and although it offers numerous benefits, with the increase in the human population the forest becomes an obstacle and he clears it in many places. A classic example of such behaviour on a large scale are the Mediterranean countries, which were once stocked by green deciduous and coniferous forests, and during the last millennium became barren Karst terrain as a result of man's devastating and irrational "management".

Vegetables have primary importance in man's nutrition, and during his existence man strove to improve the quality and quantity of natural forms of food. - particularly during the past century, which resulted in the disappearance of many original forms (clearly such activity starts and ends with the seed). However, man did not restrict himself to the selecting and breeding of plants, he also does the same with animals, and even more he even enters the forest ecosystems and irretrievably devastates them. A classic example are the German forests, which were completely changed at the end of the 19th and beginning of the 20th centuries, when coniferous cultures of spruce and scotch pine were planted on the ecosystems of cleared deciduous species. Today German foresters spend approximately 15,000 EUR per ha in order to re-establish these former deciduous forests.

Geographically Croatia belongs partly to the Mediterranean and partly to continental Middle Europe. Orographically it is mainly a hilly, mountainous region with the Pannonian Plain, which together with relevant great climatic diversities, represents significant biodiversity (in < 5% of Europe > 65% of European flora can be found). In these areas the "managemental" influence of man has been, and still is today, recognisable in the devastating consequences in forest ecosystems. Forest ecosystems are very sensitive live media which sensitively react to man's activity, both in forestry management and still more intensely to other, mainly destructive, devastation.

Lowland forests in the Pannonian part of Croatia (1,050.000 ha) were self reestablishing types of virgin forest, which during the 19th century experienced devastating cuttings and uprooting of trees (3/4 of Peduncled oak forests were cut and uprooted), and in the first half of the 20th century the field elm, as a hard core of the stability of those ecosystems, disappeared from them

for ever. This resulted in changes in the global climate, water regime, etc., which prevented continuity of natural reforestation and its restocking (mostly by seed), the extent of which can be determined from the growing index of acorn consumption during the last 45 years, i.e. from 100 to 1,500.

Selection forests in the Dinaric region of Croatia (315,000 ha) are exposed to almost the same fate as those in the Pannonian region, with the exception of the clearing on large areas. However, this region is burdened by pollution, both from across the border and domestic pollution, which contribute to extensive dieback of the most important management species - the fir, and consequently the very complex problem of its (until recently natural) reforestation. It should also be emphasised that during the last fifty years > 100 million spruce seedlings and the same amount of its seed were introduced into the fir sites by complementary sowing, which severely destructed the ecological system of management of forest types of fir and beech.

The degraded forests of the Mediterranean region of Croatia 1,050,000 ha) are in a worst position. Throughout the centuries, exposed to devastation by man and livestock, they are still capable of natural reforestation, in spite of devastating forest fires caused by man, which during the last fifty years destroyed not only vegetation cover but also, much worse, the soil. It should not be forgotten that forest management on the Karst, primarily assumes rational management of the soil. Rational management in this region requires vast material financial resources (which cannot be provided by the forestry) in which forest seed plays the initial and decisive role. Society caused the problem and should therefore remedy it!.

Europe needs us because of our relatively still preserved natural resources, which forest ecosystems give irreplaceable character and importance. Therefore, we must work towards the mutual goal; i.e. to find ways and means to protect our inherited forests from further devastation by unmerciful profiteering machinery of this "civilised" part of humanity.

Key words: forest ecosystems, devastation and natural reforestation