

## *In Memoriam*

### **Dr Slobodan Regner (1944–2019)**

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Dr Slobodan Regner (75), scientific advisor at the Institute of Marine Biology-University of Montenegro, passed away on August 8, 2019 in Belgrade. His death dealt a huge blow to the Montenegrin academic and scientific communities due to his role as founder and keeper of modern marine fish biology in Montenegro. After his death we were left without a man who knew a great deal about the sea, who dedicated his whole life to revealing its mysteries, and one who selflessly and effortlessly shared his knowledge.

Slobodan Regner was born on November 4, 1944 in El-Shatt, Egypt. He finished primary school and high school in Belgrade, after which he enrolled in biology studies at the University of Belgrade, Faculty of Natural Sciences. During the summer courses of his studies he spent time researching Adriatic benthos in the Institute of Marine Biology in Rovinj. After completing his studies in 1967 he received a scholarship from the Institute of Oceanography and Fisheries in Split for studies of biology (system-ecology) at the University of Zagreb, Faculty of Natural Sciences. It was in Split that his scientific career began, where he devoted his time to the exploration of the Adriatic Sea, especially the economically important fish species. He defended his MSc thesis, “A contribution to the knowledge of the ecology of the planktonic stage of anchovy life, *Engraulis encrasicolus* (Linnaeus, 1758), in the middle Adriatic”, in 1970, and his PhD thesis “Ecology of the planktonic stage of anchovy, *Engraulis encrasicolus* (Linnaeus, 1758)”, in 1980, at the University of Belgrade, Faculty of Natural Sciences. He dedicated time spent at the Institute of Oceanography and Fisheries in Split to researching the ecology of plankton



stages of fish species, beginning with a qualitative and quantitative analysis of ichthyoplankton in the Adriatic, research into the spatial-temporal distribution of eggs, larvae and postlarvae of fish in the Adriatic Sea plankton, an examination of the growth and development characteristics of eggs, larvae and postlarvae of certain fish species in experimental conditions, analysis of the causes of fluctuation in abundance of planktonic stages of fish species, especially anchovies, and the assessment of the biomass of sardines and anchovies in the Adriatic Sea based on their daily egg production and relative fecundity. He also conducted research into the population dynamics of adult small blue fish, primarily sardines and anchovies, by long-term data analysis of their previous catch numbers and long-term prognosis on their future catch numbers based on a mathematical approximation of their time series.

As a member of several councils and work groups, he helped create the model for the development and organization of marine fisheries of the former Yugoslavia. He was the vice-president of the Commission for Scientific Research and Technological Development of Marine Fisheries, which was part of the Marine Fisheries Business Communities of Yugoslavia. He was vice-president of the University of Split work group charged with establishing fisheries studies at the Faculty of Maritime Studies. In the early 1980s, Dr Regner was responsible for building the blueprint for the reconstruction of the “BIOS” ship, at that time the largest vessel for scientific research in Yugoslavia. The ship was fully reconstructed, equipped with state-of-the-art equipment to facilitate multidisciplinary research, from physical to biological oceanography,

the study of natural characteristics, fish-stock assessment and conservation of the Adriatic Sea. In addition to the abovementioned, he was also a mentor to two distinguished marine biologist, Dr Ivan Katavić and Dr Jakov Dulčić, from the Institute of Oceanography and Fisheries in Split.

He spent one part of his career in Belgrade, where from 1991-1993 he worked as Head of Department in the Museum of Natural History. Afterwards he worked in the Serbian Ministry of Science and Environmental Protection from 2006 to 2007, and the Institute for Multidisciplinary Research, University of Belgrade, from 2007 to 2011. As a mentor, he supervised two PhD theses, he expanded his interests into the analysis and forecast of the Pontic shad (*Alosa immaculata*) catchment in the Danube River, and the prediction of fish catches in the Danube River, based on long-term variability in environmental parameters and catch statistics.

It is safe to say that with the arrival of Dr Slobodan Regner in 1994, the Institute of Marine Biology in Kotor began a new era of marine fisheries in Montenegro. It should be noted that from the time the Institute (Department of Marine Biology) was established in 1961, there was research and work in the field of marine fisheries done by the Departments' associates, especially in the fields of morphology and taxonomy of various fish species, the structure of the ichthyofauna in the Bay of Kotor, as well as in fish parasitology.

Parallel to his rich and extensive experience gathered in the Institute of Oceanography and Fisheries in Split and participation in marine scientific expeditions with Italian colleagues, Dr Regner also introduced fisheries' biology components into the Montenegrin marine fisheries resource research.

The key to responding adequately to the demands and standards of the General Fisheries Commission of the Mediterranean lay in the partnership with the Ministry of Agriculture. Based on the population dynamics of economically significant fish, crustacean and cephalopod species, an estimate of their biomass in the territorial and international waters near Montenegro was given. From these data a fishing effort was calculated – the optimal number of fishing vessels, i.e. the maximal biologically sustainable level of an-

nual use. This marked the beginning of responsible fishing in Montenegro. Montenegrin fishermen that understood the necessity of proper resource management became key partners in this process. In an easy and simple manner, Dr Regner showed the fishermen how to take greater care of fishing and the importance of science in the process of sustainable resource management.

At the same time, as a member of the Montenegrin delegation, together with representatives from the Ministry of Agriculture, Dr Slobodan Regner represented Montenegro in all international bodies related to fishing in the Mediterranean. His opinion was held in very high regard, and through his scientific work, Montenegro took its rightful place in the family of Mediterranean fishing countries and became a crucial partner in all marine fishing matters.

Dr Regner's work was broadened to include the ecology of benthic fish, crustacean and cephalopod species in the dredge fishing of Montenegro. For the first time, analysis of the population dynamics of common pandora, red mullet and prawn were performed because these were the most economically significant species in the previously mentioned catches. He also conducted research into the population dynamics of juvenile and adult stages of small blue fish, primarily sardines and anchovies, in the Bay of Kotor, their natural spawning and feeding area. For the first time as part of an international scientific survey, the biomass of small blue fish in Montenegrin waters was established.

As a mentor, Dr Regner trained 5 junior associates of the Institute of Marine Biology-University of Montenegro, thereby forming a team that, together with him, continued to research the demersal and pelagic resources of Montenegro. He is also credited for the formation of the Laboratory of Ichthyology and Marine Fisheries Institute, which was equipped to perform any task that the FAO (Food and Agriculture Organization of the United Nations) and GFCM (General Fisheries Commission of the Mediterranean) required. Even now, Dr Regner's methods and research are frequently mentioned, especially his mathematical and statistical models for the approximation of time series for the fluctuation of small blue fish in the Adriatic.

As part of the preparation for the European Union accession as an EU candidate country, Montenegro has intensively worked on its European fisheries policy. As a consequence, a new law of marine fisheries was passed in 2009. Dr Regner's contribution in the drawing up of this law was immense. His vast experience is deeply ingrained in the fabric of what will become the Sustainable Development of Aquaculture and Fisheries in Montenegro. Simply put, any activity tied to marine fisheries in Montenegro could not be imagined without Dr Regner's participation. Even

after retirement, he gladly contributed to the betterment of the Montenegrin fisheries.

Recognizing and promoting marine fisheries as a significant part of the economy of Montenegro, while at the same time holding scientific principles in high regard, is for the most part the achievement of Dr Slobodan Regner and the Ministry of Agriculture and Rural Development. The relevant ministers and their assistants who collaborated with Dr Regner had a great deal of respect for the man and valued his opinions.