Program	**PN II – P4-D3-C1-2134 (ctr. Nr. 31-086/14.09.2007)**
Project title (ENG):	**Spatial-temporal evolution of the aquatic ecosystems – criteria for establishing the ecological dynamics**
Project title (RO):	**Evolutia spatio-temporala a caracteristicilor ecosistemelor acvatice-criteriu de stabilire a dinamicii ecologice**
Duration	2007-2010
Team Leader	Senior Researcher Eng. Gheorghe BATRINESCU
Summary (short description) ENG	ECODIN Project has proposed to emphasis the spatial-temporal evolution of the aquatic ecosystems characteristics on a emissary range, creating a data base useful for the developing of a mathematical model for estimating the biological and ecological diversity dynamics in a structural and functional plan. The investigations systemically made to the characteristics of the water (surface water and groundwater) and sediments environment compounds allowed the integrated approach of the pollution phenomenon extended to the groundwater and the identification of the inter influence between the phreatic and the surface waters. For realized a specialized software it was projected and experimented an INTEGRATED MONITORIZATION SYSTEM to established the dynamic ecological situation of the Suceava river and 3 of his main tributaries (Pozen, Solonet, Salcea), investigating the underground water in the neighbour of the Suceava river and studying the metals partition in the Suceava river sediments.The system include: a) 25 monitoring sections (17 on the Suceava river, 5 on the Solonet stream, 2 on the Pozen stream and 1 on the Salcea stream); in every monitoring sections were determined 27 physico-chemical and biological parameters for the surface water and 9 physico-chemical and biological parameters for the sediments; b) 3 drilling underground water; were determined 10 physico-chemical parameters The system were aplicated in 12 investigation campaigns which include all seasons. The experimental dates obtained were introduced in a unic DATABASE, once definined and simultaneously used by more software rutine; the dates represented a common resource for all system routines. The DATABASE containes the operational dates and their description. The dinamic ecological situation was described using a MATHEMATIC MODEL which include 9 integrated differential ecuations by Euler method; in the structure of the ecuations were used 27 parameters in correlation with the indicators review. Based on mathematical model and experimental dates were realized, a functional model, SOFTWARE APPLICATION "ECODIN". The application include two functional models: -a software module of numeric and graphic analise of the environmental components surface water and sediment - a software module estimation the main pollutants values in some monitoring sections of the both rivers, Suceava and Solonet.
Summary (short description) RO	Proiectul ECODIN si-a propus evidentierea evolutiei spatio-temporale a caracteristicilor ecosistemelor acvatice pe traseul unui emisar, creand astfel baza de date utila dezvoltarii unui model matematic de estimare a dinamicii diversitatii biologice si ecologice in plan structural si functional. Investigatiile realizate sistematic asupra caracteristicilor componentelor de mediu apa (apa de suprafata, subterana) si sedimente au permis abordarea integrata a fenomenelor de poluare extinse si asupra apelor subterane si identificarea interinfluentei dintre freatic si apele de suprafata. Pentru realizarea softului specializat, a fost proiectat si experimentat un SISTEM INTEGRAT DE MONITORIZARE pentru stabilirea dinamicii starii ecologice a emisarului natural raul Suceava si a 3 dintre afluentii acestuia (paraul Solonet, paraul Pozen si paraul Salcea), prin investigarea calitatii apei subterane in vecinatatea

	albiei majore a raului Suceava si prin studiul partitiei metalelor determinate in sedimentele raului Suceava. Sistemul include: a) 25 de sectiuni de control (17 situate pe raul Suceava, 5 pe paraul Solonet, 2 pe paraul Pozen si 1 pe paraul Salcea), in fiecare sectiune fiind analizati 27 de indicatori fizico-chimici si biologici pentru apa de suprafata si 9 indicatori fizico-chimici si biologici pentru sedimente; b) 3 foraje de control a calitatii apei subterane, pentru fiecare fiind determinati 10 indicatori fizico-chimici. Sistemul a fost aplicat in cadrul a 12 campanii sezoniere de investigare ce au acoperit toate anotimpurile. Datele experimentale obtinute au fost introduse intr-o BAZA DE DATE, proiectata ca un depozit de date unic, definit o singura dată şi utilizat simultan de către mai multe rutine software, astfel încât datele să reprezinte o resursă comună tuturor rutinelor sistemului. Baza de date conţine atât *datele operaţionale*, cât şi *descrierea acestora*. Dinamica starii ecologice este descrisa cu ajutorul unui MODEL MATEMATIC care are in componenta 9 ecuatii diferentiale integrate prin metoda numerica EULER; in structura ecuatiilor au fost utilizati 27 de parametri de stare, in corelatie cu indicatorii analizati. Pe baza modelului matematic si a datelor experimentale a fost realizata in final, la stadiul de **model functional**, APLICATIA SOFTWARE "ECODIN". Aplicatia are doua module functionale: -un modul software de analiza numerica si grafica a componentelor de mediu *apa de suprafata* si *sediment*; -un modul software de estimare a valorilor unor poluanti reprezentativi in anumite sectiuni de control ale celor doi emisari, Suceava si Solonet.
Dissemination of results	
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