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| **Program** | **Program NUCLEU PN 16-25 02 01** |
| **Project title (ENG):** | Bioindicators used to evaluate pollution and to monitor the quality of underground water |
| **Project title (RO):** | Bioindicatori utilizati pentru evaluarea poluarii si pentru monitorizarea calitatii apei subterane |
| **Duration** | 2016-2017 |
| **Team Leader** | Dr. Catalina Stoica |
| **Summary (short description) (ENG)** | This project aimed to evaluate the degree of contamination of groundwater resources in a rural area from a biological and physical-chemical point of views, in relation to the impact of natural and anthropogenic factors. In the context in which, in the last decades, human activities (industrial development and agriculture) had a major impact on all ecological systems around the world. Although steps have been taken or measures have been initiated regarding the monitoring/removal/reduction of contaminants at the level of these systems, there are still gaps regarding the correct management of the natural capital components. If we refer to aquatic systems, groundwater represents the largest reservoir of fresh water worldwide, having a particular importance due, first of all, to its use as drinking water.<br>The assessment carried out during the study period showed an interdependence between the fauna associated with the studied groundwater systems, the bacterial microflora and the state variables (physico-chemical parameters: especially the oxygen regime - measured by CCOMn and TOC, turbidity). From the extensive analysis carried out at the level of groundwater systems in the rural area, we assume that quality indicator "turbidity" associated with the presence of certain indicator species of organisms (from the stygofauna structure) can be integrated into an index regarding the organic loading of groundwaters. |
| **Summary (short description) (RO)** | Acest proiect si-a propus sa *evalueze gradul de contaminare a resurselor de apa subterana dintr-o zona rurala* din punct de vedere biologic si fizico-chimic, in raport cu impactul factorilor naturali si antropici asupra acestor resurse, surse de apa care alimenteaza populatia. In contextul in care in ultimele decenii, activitatile antropice (dezvoltarea industriala si agricultura) au avut un impact major asupra tuturor sistemelor ecologice din intreaga lume. Desi au fost efectuate demersuri sau au fost initiate masuri privind monitorizarea /inlaturarea/ reducerea contaminantilor de la nivelul acestor sisteme, exista inca lacune in ceea ce priveste administrarea corecta a componentelor capitalului natural. Daca ne referim la sistemele acvatice, apele subterane reprezinta cel mai mare rezervor de apă dulce de la nivel mondial, avand o importanta deosebita datorita, in primul rand, utilizarii ei ca apa potabilă. Evaluarea efectuata in perioada de studiu a proiectului (2016-2017) a aratat o interdependenta intre fauna asociata sistemelor avatice subterane studiate, a microflorei bacteriene si variabilele de stare (parametrii fizico-chimici: mai ales a regimului oxigenului – masurat prin CCOMn si COT, turbiditate). Din analiza extensiva efectuata la nivelul sistemelor acvatice subterane din zona rurala, consideram ca indicatorul de calitate „turbiditate” asociat cu prezenta anumitor specii indicatoare de organisme (din structura stygofaunei) pot fi integrate intr-un indice privind incarcarea organica a apelor subterane |
| **Dissemination** | Catalina Stoica, Gabriela-Geanina Vasile, Alina Banciu, Daniela Niculescu, Irina Lucaciu, Mihai Nita-Lazar, *Influence of anthropogenic pressures on groundwater quality from a rural area,* Revista de Chimie, vol. 68, no. 8, pp: 1744-1748, 2017. |
| | Catalina Stoica, Gabriela-Geanina Vasile, Alina Banciu, Daniela Niculescu, Irina Lucaciu, Mihai Nita-Lazar, „*Influence of anthropogenic pressures on groundwater quality from a rural area”,* Simpozionul International „*Mediul si Industria*” – SIMI 2017, Bucuresti, 28-29.09.2017, Tipul prezentarii: comunicare orala |