

EGU24-21088, updated on 19 May 2024

<https://doi.org/10.5194/egusphere-egu24-21088>

EGU General Assembly 2024

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On promoting education and community adaptation in Global South's studies populating the Digital Water Globe: the DREAMS project for the HELPING Science Decade

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We present a contribution to promote education and community adaptation from a Global South's case-study to populate the Digital Water Globe. From a NSFC-FAPESP project 'Flash Drought Event evolution characteristics and the response Mechanism to climate change considering the Spatial correlations (DREAMS)', we discuss lessons for the IAHS HELPING Decade. DREAMS aims to respond to "science-for-policy" and "education-for-action" questions around Sustainable Development Goals of what adaptation pathways are feasible to cope with human-water impacts under change. DREAMS is organized into Research Methods of Drought resilience through Community-based Adaptation (CbA), Ecosystem-based Adaptation (EbA), Nature-based Solutions (NbS) and Participatory Action Research (PAR). DREAMS seeks for enhancing local case studies for the IAHS/Digital Water Globe with the multidimensional impacts of flash droughts addressed to SDGs nexuses of poverty, health, education, sanitation, economy and climate action. Here we discuss a DREAMS-CbA initiative in the headwaters of the Corumbataí river basin (PCJ River Basin Committee, MG-SP, Brazil) for building community knowledge of climate change and pro-environmental behaviours adapted into both new climate activism and teachers' curriculum. In 2023, DREAMS started CbA strategies in different education levels for tradeoffs for drought's duration, namely: in the primary schools, with teachers and pupils of local schools at the headwaters of selected river basins; in higher education, through the community-adapted curricula. In primary schools, with a CbA strategy based on educational methods of Science, Technology, Society and Environment ("*CTSA, Ciência, Tecnologia, Sociedade, Ambiente*", in Portuguese), the DREAMS' researchers conducted the local project "*Árvores da Amizade e Água*:"

Preservar para não faltar!" (Friendship Trees and Water: Preservation and Conservation) with environmental education and climate-adaptation in the PCJ river basins' headwaters with teachers, staff and pupils of the public school EMEF Profa Zezé Salles, Analândia-SP (Taffarello, 2023). DREAMS' communication and open science literacy are expanded by: a new UNESCO Chair; the USP Center for Education and Research on Disasters (<http://www.ceped.eesc.usp.br/>); the Braz. Water Resources Assoc. Technical Commission on Education, and three Braz. Inst. of Sci. & Tech., INCTs, of "Climate Change-Phase 2"(CEMADEN), "Food Insecurity (FSP/USP)" and "Nat. Observatory for Water Security & Adaptive Mgmt", ONSEAdapta (UFPE, <https://onseadapta.org>). With Panta Rhei groups, and during the 100-year drought of Amazon river, DREAMS promotes archetypes of the Coevolution of the Amazon-Sanitation-Hygiene Paradox. DREAMS' future work envisages more local examples for DWG, i.e. river basins of Yangtze (China), São Francisco (Brazil), Amazon and Parana (transboundary). References: Mendiando, E M (2023) Flash Drought Event evolution characteristics and response Mechanism to climate change considering Spatial correlations, FAPESP 2022/08468-0, <https://bv.fapesp.br/en/auxilios/111385/flash-drought-event-evolution-characteristics-and-the-response-mechanism-to-climate-change-consideri/>; Taffarello, D (2023) "Árvores da amizade e Água: preservar para não faltar!", CTSA Adaptation to Climate Change Impacts in Analândia-SP, EMEF Profa Zezé Salles, Environmental Education Project, Report.