The following specific objectives have been established to meet the overall objective:

(i) Screening of leading bioremedial processes and adequate regulations and benchmarking, in order to define target values of the intended processes and technologies, target contaminants, biosorbents and bioaccumulators, together with establishing the configuration and scale of the treatment system/bioreactor;

(ii) Studies on the biosorption and bioaccumulation of some heavy metals and persistent organic pollutants under various experimental conditions, data evaluation and analysis, modeling the processes, application of new chemical and microbiological tools for exploring the processes;

(iii) Enhance the removal efficiency by developing novel adsorbents and bioaccumulators, find the optimal combination of biosorbent/contaminant/process parameters to form an integrated approach applicable to various water treatment and bioremediation processes;

(iv) Provide a rapid cost-effective routine with reliable monitoring opportunities for enhancing the effectiveness and improving the predictability and reliability;

(v) Scale-up of laboratory processes at bench scale and simulation of applicability at large scale, provide technical prototypes and know-how for biotreatment;

(vi) Integrated assessment and performance validation through cost/benefit analysis, Life Cycle Assessment and risk evaluation, large dissemination of the results.

Project description/activities

The project is structured in 7 well-integrated work packages (WPs). The work plan consists of two main parts: (i) the scientific work and the technological development will be performed within WP2-WP6. WP3-WP4 aim at exploring the “black box” of biosorption and bioaccumulation, providing in-depth knowledge about mechanisms, kinetic and thermodynamic issues, relations between biomass growing and sorbate binding, various metabolic processes. (ii) This RTD-module will be handled by the project management (WP1) and dissemination (WP7) (Pert Diagram, Fig. 1)

For more information on the BIOSACC Project please visit: http://biosacc.xhost.ro/.

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Fig. 1. Graphic presentation of the project structure