Theme 6 „Environment"
Offer for the participation in the project that will be prepared for the 4nd call for proposals
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The institution	**Name**: Plant Breeding and Acclimatization Institute, Research Division Jadwisin, Laboratory of Potato Physiology
	Address: Jadwisin, 05-140 Serock, Poland
	Represented by: name: Krystyna Rykaczewska e-mail: k.rykaczewska@ihar.edu.pl tel: 022 782 72 20; 022 782 62 65; fax: 022 782 66 20;
Is interested in the participation in a project that will be prepared and submitted in the following topic:	
Number and title of the area	Area 6.1.1.6 Response strategies: adaptation, mitigation and policies
Number and title of the open topic	ENV.2010.1.1.6-1 Climate change mitigation options linked to deforestation and agriculture in the context of a post-2012 international agreement on climate change

Short description of the organisation:

Objectives:

- Study of potato cultivars tolerance to environment abiotic stress factors by classic methods and with implementation the technique of fluorescence chlorophyll *a*.
- Effect of high temperature stress in different periods of the growing season on potato plant development and yield.
- Potato plant water demands and irrigation.
- Protein evaluation in potato tubers, leaves and roots differing in dehydration tolerance.
- Oxidative isoenzymes pattern and total activity in tubers of potato cultivars differing in dehydration tolerance.
- Evaluation of crop quality due to water shortage.
- Study and assessment of potato cultivars usefulness for ecological production.
- Seed potato production in hydroponics and aeroponics from microtubres.

Scientific staff: three persons.

Expertise: plant physiology, potato agronomy

Equipment:, electrophoresis equipment 2D - Multiphor II, !d Mini Protean Tetra Cell, spectrophotometr, Chlorophyll Fluorimeters: Handy PEA & Pocket PEA (Hansatech Instruments)

Collaboration: Warsaw University of Life Sciences - Biochemistry Department, Plant Physiology Department

Proposed contribution to the project:

- Identification of biochemical indicators of potato genotypes tolerance to soil drought (using 1 DE and 2 DE)
- Assessment of potato genotypes tolerance to high temperature stress in different periods of growing season; the experiments under controlled and field conditions with implementation of the technique of chlorophyll *a* fluorescence
- Field experiments with potato irrigation and fertigation
- Field experiment with irrigation of ecological potato plantation
- Assessment of water demands of potato cultivars

Chosen references (publications, others):

Boguszewska D., Grudkowska M., Zagdańska B. 2008. Peroxidase isoenzymes pattern and total activity in tubers of potato cultivars differing in dehydratation tolerance. Physiol Plant. 133, Issue 3, PO9-39.

Rykaczewska K. 2004a. Effect of high temperature during vegetation on potato (*Solanum tuberosum* L.) yield, period of tuber dormancy and seed tuber yielding ability.Part I, II, III. (in Polish). Zesz. Probl. Post. Nauk Roln. ISSN 0084-5477; 496: 185-218.

Rykaczewska K., S. Pietkiewicz, H.M. Kalaji 2007. The influence of climate warming on potato plant development in Poland. [In:] Farming System Design 2007: Farm-regional scale design and improvement. Symposium on Methodologies for Integrated Analysis of Farm Production Systems. September 10-12, 2007. Catania, Sicily, Italy: 217-218.