



# UNIVERSITÀ DI PAVIA

## Corso di Dottorato in Scienze della Terra e dell'Ambiente

### 1. Project title

Seed biology and establishment ecology of selected wild rice species and cultivated traditional rice varieties towards conservation and management.

### 2. Proposer

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### 3. Research Unit

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### 4. Key words

(Max. 5 – at least 2)

Hydro-time modelling, Hydrothermal-time modelling, seed viability, longevity, drought tolerance, IUCN red list

### 5. Abstract

(Max.1.500 characters with spaces)

Rice is the premier food crop in the world, being a major staple food for more than half of the world's population. The genus *Oryza* consists of 24 species, 22 of them are wild rice (WR) and two are cultivated. Wild rice species and traditional cultivated rice varieties (TCRV) have the potential to contribute to a world-wide need for agricultural rice development. For instance, wild species serve as secondary gene pools of cultivated rice and also they are a critical source of genes for resistance to diseases, pests and stresses such as droughts, floods, and temperatures thereby important for future rice breeding efforts.

Sri Lanka is considered as diversity centres for genetic resources of wild rice species and traditional cultivated rice varieties. More importantly, these WR and TCRV are important components of ecological, biodiversity and cultural heritage of this country. Thus, conservation and sustainable uses of them are very important to improve cultivated crops through plant breeding, increase food security and maintain ecosystem health. However, there is a basic lack of information on the seed biology and establishment ecology and conservation status of Sri Lankan WR species and TCRV. Therefore, this project will fill a knowledge gap on the distribution, conservation status and seed biology, including dormancy, longevity in storage and seed priming of selected wild and traditional cultivated rice varieties. Overall the information generated from this project will be useful to layout future *in/ex-situ* conservation planning and sustainable utilization of these valuable wild rice species and traditional cultivated rice varieties in Sri Lanka