



Fig1. EyesOnFarm prototype.

## A MOBILE APPROACH FOR FARMER-COMPUTER INTERACTION

PREVENTION AND CONTROL OF THE GRAPEVINE MOTH

There are several ICT solutions for the agriculture sector out in the market today, but in order to develop software that's going to be adopted and accepted by users it's necessary to design with them at the centre of the process.

## Motivation

In Portugal there's a lack of research literature regarding farmers' needs and expectations when interacting with mobile agriculture applications, thus it's relevant to conduct a research, using a user-centred design methodology within the field of human-computer interaction. The aim of this study is to develop and adapt a mobile solution based on the users' needs and context of use.

## Methodology

The user centred design methodology was used encompassing the following phases:

## Phase 1 – Requirements

## Gathering

During this phase an analysis of the existing android applications in the market were analysed, the research sample was established as winegrowers in the Douro region and research methods were used to collect data to inform the system's requirements. Interviews and field visits were the chosen methods.

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Fig2. The user centred design methodology phases.

## Phase 2 – Analysis

After collecting data it was necessary to analyse it, therefore personas and problem and activity scenarios were created. Also use cases and hierarchical task analysis diagrams were made. The scope of the study evolved from Agriculture in general to Prevention and Control of the grapevine moth.

## Phase 3 – Design

With the requirements for the system established it was necessary to study design guidelines focused on the target audience and context of use. These would later inform the creation of the concrete designs.

# Phase 4 – Prototyping and Evaluation

Low and high-fidelity prototypes were designed and evaluated with real winegrowers by performing a usability test.

## Findings

Besides conceptualising and creating concrete designs for a mobile application adjusted to users' needs and expectations it was also possible to create design guidelines, regarding ergonomic factors, interface design and navigation and information architecture, for future projects with similar target-users.