

# **Center for Community-Based Resource Management (CBRM)**

**Natural Resources Institute, University of Manitoba**

## **CBRM Database**

<b>Date:</b>	<b>02/Dec/2014</b>	<b>Entry Number:</b>	<b>1346</b>
<b>Case Study Name:</b>	<b>ECOLANG – A communication language for simulations of complex ecological systems</b>		
Authors:	António Pereira, Pedro Duarte, Luís Paulo Reis		
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Region:	Europe		
Country:	Portugal		
Ecosystem Type:	Coastal ecosystems		
Social Characteristics:	Coastal community		
Scale of Study:	National – Regional scale		
Resource Type:	Tourism, fisheries, aquaculture, other harbor activities.		
Type of Initiative:	Research-driven project		
Community-Based Work:	Modelling		
Keywords:	Ecological Modelling, Intelligent Agents, Simulation, Models, Communication Language.		

**Summary:**

This document introduces ECOLANG, a communication language used for simulations of complex ecological systems. The language was developed with the main purpose of interchanging information between a simulation application of aquatic ecosystems (EcoDynamo) and several external agents. These agents have some goals about the simulation results or the simulated system. Examples of the former may be a calibration agent, with the goal of optimising the fit between observed and simulated results, whereas an example of the latter may be an aquaculture/farming agent, looking for production optimisation. This document focus on messages exchanged between EcoDynamo and the two mentioned agents providing examples of the communication protocol. This work is part of a larger project, where ECOLANG will be used as a tool for “goal-oriented intelligent simulations”, towards sustainable management of coastal ecosystems.