

# **REPORT OF THE ADVISORY COMMITTEE TO THE CENTRE FOR THE RESEARCH AND TECHNOLOGY OF AGRO-ENVIRONMENTAL AND BIOLOGICAL SCIENCES (CITAB)**

## **ACTIVITIES OF CITAB 2010**

### **INTRODUCTION**

The Advisory Committee (AC) made a series of recommendations following its visit to the CITAB in January 2010. These recommendations were based on an analysis of the changing trends in the research areas covered by CITAB and the need to ensure that the outputs of the Centre were moving in the direction of excellence and were fully in line with the socio-economic needs of Portugal and the Trás-os-Montes region in particular.

CITAB'S Annual Report for 2010 has provided a detailed account of the work of the Centre since this time and what steps have been taken to work towards most of these recommendations. The record shows an impressive response in certain areas whilst others are still to be met. In part the lack of progress in certain areas must reflect the difficult economic circumstances that are affecting the country and the EU as a whole.

### **OBJECTIVES**

#### ***SCIENTIFIC***

The primary focus of the Centre is to develop sustainable production chains with the aim of ensuring that agro-food and forestry systems in Portugal remain competitive. Specific focus on strategies on plant stress adaptation to water shortage and climate change have been developed as well as the development of strategies for fire prevention, and improving water management in vineyards and other major crops in the region. Notable progress has been made in the development of drought-resistant varieties of chestnut and hazelnut, techniques able to mitigate sunburn damage and the effects of drought, and to improve loss of production in chestnut and olive plantations.

Whilst much of the research is long term and not of immediate application, there are aspects of the programme that are more applied and are in urgent need of securing stronger links with industry. Failure to achieve these links raises doubts about the value of continuing with the work in spite of the scientific quality of the work.

## **SUSTAINABLE AGRO-FOOD CHAINS (SAC)**

An impressive list of achievements has been compiled.

The ACES group has much in common with the REI group and some overlap with the BEG group. Many of the areas covered have exploitation potential yet it is noteworthy that there is only limited external support for these topics. More analysis should be made as to why it is considered necessary to cover all of the 8 tasks within the ACES group, what the expected outputs are, and what the exploitation situation is. In some cases the reasons why the work is so important is not made clear particularly how the knowledge generated will make important contributions to the economy and society.

The PPC group covers a wide potential field that should have a high exploitation potential. The reasons why there has been little success in exploiting the science needs to be evaluated, especially in concert with the sectors who might be expected to have a close interest.

Work on the utilization or preservation of medicinal and aromatic plants is an area, which is well researched throughout Portugal and the CITAB group needs to ensure that it is really at the forefront of this field. Important advances and exploitation potential require close collaboration with sophisticated pharmacological or clinical units otherwise the application to in-vitro systems can lead to dead ends.

There has been a notable drop in income in the SAC group during the period of this review. This is of concern as the area is one of growing importance in Europe. This group is the largest in terms of Integrated Members and the overall impact should reflect this.

## **ECOINTEGRITY (EI)**

The EI group has made excellent progress in biodiversity studies with a particular emphasis on major cropping system, sustainability and research into aquatic systems.

Work also continues in the area of added value plant products and co-products but the progress in this area is very dependent on links with economic analysis and the involvement of industry. There are yet no indications of links with economists in determining priorities and in evaluating the likelihood of success.

The work on reducing fire risk and damage is of critical importance to the economy in the north of Portugal. The work of this group proceeds with excellent developments in knowledge as well as showing good international links.

In spite of the cuts in public expenditure and the economic expenditure the EI group has increased its funding levels very significantly in 2011. This notable effort helps confirm the view of the AC that the EI group is the most mature scientifically.

The Report provides good evidence of the capacity to: -

- undertake work of direct benefit to Portugal
- secure high levels of funding from FCT in highly competitive calls for proposals subjected to international evaluation
- secure international funding and to benefit from collaborative projects
- work closely with relevant industries

The list of funded projects is large but the information provided should be more consistent (area, starting date, length of project, total funding and source of funding). The list of projects in the pipeline, either to be funded or in consideration for funding, is impressive. A similar compilation has not been provided by the SAC and BEG groups.

### **BIOSYSTEMS ENGINEERING GROUP (BE)**

The work of this group is quite applied and wide in scope judged by the topics covered in the list of publications. The group has recognized their need to obtain partners from industry to ensure the work is of wider impact.

As with the SAC group there has been a notable drop in income. It is unclear from the Report just how important some of this area of activity is. There is a clear interaction with the EI group in the development of image systems and monitoring tools but this work would be expected to be fully integrated into any excellent group looking at ecological integrity. Forward plans cover similar applied topics but it is not evident who will be the customers for some of this research.

It is not evident why some of the applied work is unable to attract industrial funding. No arguments are presented as to why the industry is reluctant to fund the work.

The list of peer-reviewed publications is high showing a good output given the size of the group.

## **ADMINISTRATIVE**

The objectives agreed by the Research groups after the Advisory Group's visit in 2010 were:-

- Greater internationalization of the Unit, through a more direct link with anchor institutions and increased mobility of CITAB members;
- An increase the interaction within and between CITAB's Groups;
- An increase the scientific productivity in JCR Journals and in other publications;
- An increase in the number of members and scholarships, particularly in the projects that clearly have a reduced critical mass;
- An increased collaboration with stakeholders;
- An improvement in outreach activities and social responsibilities.

### **INTERNATIONALIZATION OF THE UNIT, THROUGH IMPROVED LINKS WITH CITAB'S ANCHOR INSTITUTIONS AND GREATER MOBILITY.**

The Advisory Committee recommended that an effective mechanism needed to be organized that would track the opportunities for external funding, particularly important funding sources such as the European RTD programmes. This objective is yet to be realized.

### **INCREASE THE INTERACTION WITHIN AND BETWEEN CITAB'S GROUPS**

The Report highlights the areas where a closer interaction between the three areas of investigation has been achieved. There is still an indication that there are too many individual topics being covered that are not cohesive and that are not leading to a critical mass of investment in specific areas. The three groups have an unequal number of Integrated Members indicating the need to further reorganize so that the balance reflects the potential funding opportunities in the future.

### **INCREASE THE SCIENTIFIC PRODUCTIVITY IN JCR JOURNALS AND IN OTHER PUBLICATIONS**

The Annual Report has provided a detailed list of publications and indicates that there was a good publication record in peer-reviewed journals. As this is the first compilation presented to the Advisory Committee it is not known if the publication rate has increased. Whilst the scientific quality of the groups should not be based on this criterion alone, but on the impact factor associated with publication in specific journals, the overall response is very good.

## **INCREASED COLLABORATION WITH STAKEHOLDERS**

The report could provide more information about who are the potential users of the research that has been undertaken, and what is expected to be the likely impact in the sectors that would be expected to use the results. It is unclear what attempts are to be made to ensure that the collaboration is improved in terms of financing, uptake and impact.

## **IMPROVE THE OUTREACH ACTIVITIES AND SOCIAL RESPONSIBILITIES**

CITAB has demonstrated an active interaction with the business sector and with the local community. It has produced its first newsletter, which has received wide distribution. The costs associated with future distribution will be kept low if the dissemination route is predominantly via the Internet but it will be important to maintain a distribution list that specifically targets the end user. The outreach activities directed towards schools are notable and important in attracting good students.

Outreach activities take on many forms and it is unclear to what extent there is an extensive advisory and training activity involving the university and the end users e.g. the business sector. A number of European countries have dynamic research associations such as Camden BRI, the Fraunhofer Institutes etc. and the potential for CITAB to expand into similar activities should be given serious consideration.

Research targeted on expanded rural tourism possibilities based on following unique ecological features of the region could be another outreach activity that could have economic benefits.

The turnover of students qualified with higher degrees has been maintained at a overall high level. The level of recruitment of new contracted researchers is low compared with the existing numbers and this does not reflect well on the essential turnover needed to maintain research institutes at the cutting edge.

## **CONCLUSIONS**

The AC has evaluated the above report. It notes the substantial progress that has been made in meeting the AC's recommendations.

Nonetheless the AC believes the further progress towards consolidation is necessary in the light of the developments since their first report. The increased competition for research funding, as well as the critical need to ensure that the research undertaken is fully in line with the needs of stakeholders, gives further urgency to the development of a fully integrated research centre which can compete internationally and ensure it is regarded as a centre of excellence.

There should be improved attempts to link the specific research themes to the important economic and social needs of Portugal in the decade ahead. This requires more than the production of well-educated and motivated agricultural and environmental scientists. The research work must be focused on areas where the social and economic impact is clearly defined in terms of Portuguese interests. CITAB should acknowledge where it is successful and build on this success by further concentrating resources and enabling the successful groups to reach their full potential.

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