# CIISA: A 25 Year Old Young Adult… or… A Dream on Veterinary Science

Luis Tavares(✉) and All Researchers Working in CIISA 1992–2018

Microbiology and Immunology Lab, Faculty of Veterinary Medicine, Centre for Interdisciplinary Research in Animal Health (CIISA), University of Lisbon, Lisbon, Portugal
ltavares@fmv.ulisboa.pt

## Brief History of CIISA: A Fairy Tale

Let me introduce you someone I know very well, whom I met still in the womb, assisted in his birth, 25 years ago, and had the privilege to guide through childhood.

Mother was an old and traditional 160 year old lady and therefore, life for this child was not easy. This child was quite irreverent, full of energy and scientific curiosity, always struggling to occupy his legitimate place in the family and yet, the family did not recognize his value and qualities at first. Too proud of her ancestry the mother did not want, at first, to give the newcomer any credit or room to strive. However, the child insisted, kept growing and struggling and with the help of a few young friends, became a mature young identity that got even to help guiding the mother to grow younger and stronger and to represent wonderfully the family in society.

You might have guessed that this child name is CIISA. It was baptized with this designation to have a broad spectrum of representation of scientific interests in the veterinary field and to establish interdisciplinary connections between the different areas of health research.

Now, that we are celebrating his 25$^{th}$ birthday and Jubilee, I want to wish that this child, young adult, never grows old. I know he won't because it keeps in a great company. All of you, young researchers, full of energy, scientific curiosity and irreverence. The main qualities that, together with freedom to choose your one ways, are the most important characteristics needed to accomplish great Research!

## Facts: Main Marks Time-Line

1991 – JNICT launched "Programa Ciência" and grant proposals were prepared at FMV.
1992 – Results became available and the project of CIISA was highly rated (2$^{nd}$) in the main area of Agriculture and the center was created and funded near 6.5 million €.
1993 – Purchase of equipment and establishment of the research labs.
1994 – Pluriannual Funding program started and maintenance funding was obtained. CIISA's structure and statutes were defined.
1996 – First international evaluation. Classification was "Very Good" and, as a consequence, Pluriannual funding doubled.
1999 – Second international evaluation. FMV and CIISA moved to new facilities in "Alto da Ajuda".

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2000 – Evaluation results were revealed, classification was "Good" and re-organization in four main research areas occurred.
2001 – CIISA organized the 1st International Symposium on Animal Health.
2005–2006 – Preparation of the third international evaluation.
2007 – Evaluation visit. Results rated CIISA as "Very Good".
2013 – Preparation of the 4th international evaluation. Re-structure of the center.
2014 – Election of the new Coordinator. Evaluation visit occurred and results rated CIISA again as "Very Good".
2017–2018 – Preparation of the 5th international evaluation.
2018 – Visit by the Evaluation panel. CIISA's Congress 2018 and celebration of the 25th anniversary and Jubillee.

Now, back to origin … let's take a quick look at the very begining…!

**A View from Inside…**

We were in the year 1991 and a few of us had recently returned from abroad after completing PhD degrees in well internationally reputed universities. At that time, only a few research labs operated FMV in just a few scientific areas and the facilities and equipment were very scarce. Therefore, although the academic positions at FMV were warranted, the chances to continue the research lines started abroad, during the PhD training work, were low, not to say unattainable.

At the national level, however, research at the universities was just starting to be considered essential and the institution responsible to consolidate research, "Junta Nacional de Investigação Científica e Tecnológica (JNICT)", launched the first important National Research Funding program called "Programa Ciência". This was the opportunity the newcomers, that did not have conditions or labs to pursue their research lines, were waiting for.

Based on experience acquired overseas we immediately started writing a grant proposal to apply for funding to equip the labs, most of which were only used then for practical classes and education purposes. To be successful this proposal should involve most, if not all, the sectors of activity in Veterinary Sciences. In a very narrow time frame we would have to collect CVs, put together consistent plans to start research lines, lists of equipment needed, and contact research partners at both national and international levels. Most of all, the school had to act fast and unite to achieve this goal. However, some of the older professors responsible for these sectors were quite reluctant to support the demanding efforts necessary to put together such a proposal. While trying to motivate everybody to collaborate in the proposal, we were accused of "getting on our toes". We have to remember that, at this time, the departments had only recently finished organizing themselves and there were strong personalities heading them. Therefore, the school departments decided that there should be not one, but two independent proposals, one from the Department of Technology and Animal Health (DETSA), and one from the Department of Morphology and Clinics (DEMOC). The application was submitted, in the last deadline day, after a sleepless night, running against the time, harms full of dossiers, finally delivered at JNICT, in the main research area of Agriculture, since the area of Veterinary Sciences did not exist at that point.

Then came the usually long evaluation period and, while waiting, only a few of us kept hope of success, when faced with the high number of proposals that entered the program. When the results were finally revealed, we learned that DETSA's grant proposal for creation of the center for interdisciplinary research in Animal Health (CIISA) was rated second best in the area of agriculture, thus entitled for funding, and the evaluators proposed merging the two FMV's proposals. The total amount of funding attributed to CIISA was near 6.5 million euros.

The objectives of CIISA, as clearly stated in the original grant proposal are reproduced here (in italic).

*The Centre for Interdisciplinary Research in Animal Health (CIISA) was formed (in 1991/1992), to develop, integrate and articulate R&D activities conducted at the Faculdade de Medicina Veterinária (FMV). The main goal to be achieved with the establishment of this center (CIISA) was to improve the existing conditions to pursue research activities, framed within the following main areas or fundamental objectives:*

a) *To promote the study of ethio-pathogenesis, epidemiology, diagnosis and therapeutics of animal diseases with scientific, economic and social impact.*

   i. *To promote the best knowledge of the interactions involving animals, humans and environment to optimise the economic and ecological efficiency of the animal farms and to avoid its negative aspects.*
   ii. *To study the strategies for quality control of the products of animal origin.*
   iii. *To create polyvalent infrastructures to be used in the future by other research areas within the scope of the proposed main objectives.*
   iv. *To develop and test new technologies in basic science to serve the previously mentioned objectives.*

b) *To provide services to the community thus participating in the national development by celebrating research contracts with public institutions and private companies operating in agricultural, pharmaceutical and food industry.*
c) *To enhance the technical and scientific interchange programs and international cooperation between our researchers and their counterparts in the Portuguese speaking countries, in the EU and in the USA.*
d) *To open FMV to the outside providing the professional community with education activities that include the organisation of specialised courses and updates in animal health.*

Next step was taken much more confidently but it was even a more difficult one to accomplish. It was now necessary to select which equipment to acquire, with the available 6.5 million in funds, from a very long list of units previously proposed by the various laboratories that had applied. For greater efficiency of the process, the decision was made to establish priority criteria. The first was the shared use of equipment between laboratories, aiming to try to tear down the walls between sectors and to stimulate a true spirit of interdisciplinarity, while avoiding unnecessary and expensive duplications. The second was demonstration that equipment was indispensable to achieve the objective of establishing the research lines proposed. This phase took place with a certain degree

of dispute and some uneasiness, already foreseeable. However, the greater challenge came unexpectedly when, decided what to purchase, it was time to start the acquisition process, following the strict rules of the public administration, which were in certain cases quite restrictive as far as the choice of the supplier based in quality and specificity of the equipment were concerned. In addition, according to JNICT rules, the funds would only be reimbursed after completion of the whole acquisition process, invoice and receipt included, which made it virtually impossible to continue, due to the scarcity of resources the institution could make available to pay expensive pieces of equipment up front. Finally, the solution was found and, after long hours of negotiation and an exercise of mutual trust between the school and the suppliers, the paraphernalia of scientific tools were delivered, distributed and accommodated in the different labs.

The first important phase of CIISA's birth process, the materialistic one, had been accomplished. Of course, by then the first reports on funding application had to be produced and delivered in due time, which required a careful administrative organization and the choice of a coordinator and a coordination team. All researchers involved had the opportunity to participate in the coordinator´s election process and the democratic choice fall on my shoulders, most probably reflecting the success of the previous steps.

Once equipped the labs now needed funding for consumables in order to operate. That started the second important phase of consolidation of the center, and the insistent request for pluriannual funding. Finally, in 1994 the first Pluriannual Funding program launched by JNICT took place and CIISA, now more confidently, once again did not miss the opportunity to apply, and once again it was funded. Another grant application had to be organized, now describing in more detail how the centre planned to develop further and how a true cooperation between labs to achieve common goals was underway. We can consider that 1994 and the start of the Pluriannual Funding achieved then, mark the transition of CIISA from baby to childhood.

By that time, although most school members, professors and researchers, were already convinced of the advantages of unifying all research efforts within the scope of CIISA, it was still common to hear expressions like "my research is independent from CIISA", from members and labs that obtained individual project funding. It took very many years before all the walls between labs became bridges to bring together growth perspectives.

Originally, CIISA integrated two main research units: Technology and Animal Health and Morphology and Clinics, mirroring the two initial proposals from the departments that had merged. A third Unit of Tropical Veterinary Sciences was included later to accommodate the researchers from the tropical Veterinary and Zootechnic center (CVZ-INII) also hosted by FMV at the time. These units comprised several research nuclei, which were corresponding to the various teaching and research sections pre-existing at FMV.

A. Technology and Animal Health Unit

- Nucleus of Retrovirology and Immunology
- Nucleus of Infectious Diseases
- Nucleus of Economics, Epidemiology and Public Health
- Nucleus of Reproduction and Physiology

- Nucleus of Genetics
- Nucleus of Animal Products Technology
- Nucleus of Biochemistry
- Nucleus of Sanitary Inspection of Food Products of Animal Origin
- Nucleus of Animal Nutrition
- Nucleus of Parasitology and Parasitic Diseases
- Nucleus of Wildlife Research

B. Unit of Morphology and Clinics

- Nucleus of Surgery
- Nucleus of Special Compared Pathology and Clinics
- Nucleus of Pharmacology and Toxicology
- Nucleus of Anatomy
- Nucleus of Electron Microscopy
- Teaching Hospital

C. Unit of Tropical Veterinary Sciences

- Nucleus of Tropical Veterinary Sciences

CIISA's evolution, the constant search for interdisciplinarity and the advise of multiple evaluation teams and advisory boards that visited the center (see below), lead to re-organization in four main research areas:

A. Animal Health and Prevention
In which the following nuclei found expression:

- Epidemiology and Veterinary Public Health
- Infectious Diseases
- Virology and Immunology.
- Bacteriology and Mucosal Immunology
- Parasitology, and Wild, Feral and Zoo Animals

B. Food Safety and Technology
Including the following nuclei:

- Food Inspection
- Food Biochemistry
- Pharmacology and Toxicology
- Technology of Products of Animal Origin

C. Patology and Medicine
Including the following nuclei:

- Anatomy.

- Patology and Histology
- Teaching Hospital and specialty clinics: Surgery, Medicine, Imagiology. Large Animal Medicine

D. Biotechnology and Animal Production
Including the nuclei of:

- Physiology and developmental biology
- Reproduction
- Nutrition and Biotechnology
- Animal Production
- Tropical Animal Science

According to CIISA's statutes the organization and decision making had the following structure: **Scientific Board** - integrated all researchers.

**Executive Board:** formed by:

**CIISA's Coordinator** (elected every 3 years) and 6-8 representatives of the nuclei working in: Animal Health; Clinics and Pathology; Animal Production;

The administrative services had one secretary that assisted the coordinator and the boards and interacted with the financial services for the management of funding.

The scientific board elected the coordinator and approved the criteria, proposed by the Coordination Board, to allocate funding obtained from JNICT's Pluriannual Funding programs. Therefore, priority was given to the following items:

- **Publications and journals acquisition -** to promote publication of scientific papers in international journals by supporting publication costs and to purchase scientific references.
- **Equipment maintenance and repair -** to pay equipment maintenance and repairs not considered within the projects.
- **Active participation in scientific meetings -** to support travel, congress registration and other expenses related with the reporting of research work in national and international meetings.
- **Preliminary and progression projects -** to support new projects and research ideas mainly aiming junior researchers and FMV assistants depending on these projects for academic progression.
- **Promising research areas -** to support and stimulate new research areas allowing preliminary studies to be initiated before external funding can be found.
- **Post-Docs -** to complement Post-docs FCT scholarships, absorbing recent postgraduates.
- **Researchers and lab technicians -** to complement FCT's BIC and PBIC scholarships.
- **Projects for MSc or PhD students -** to finance projects that involve students awarded with MSc or PhD FCT's scholarships. The funding of these projects was subjected to internal evaluation.
- **Graduating or training courses -** not applicable in 1997

- **Development of community supporting services -** to implement the exchange technical resources of CIISA and the Community, aiming at developing future financing sources.

More recently, when preparing a very thorough self-evaluation report in 2013, CIISA executive board proposed a considerable change in the structure of the center reflecting the recommendations issued by the previous evaluation panels, and a re-organization in two main research groups:

1- Animal Health and Veterinary Medicine – focused on prevention, diagnosis and therapeutics of diseases of different animals species (domestic, wild, exotic, zoological, laboratory), including zoonosis and involving aspects of Comparative Medicine.
2- Animal Science and Food Safety – concerning mainly animal production, animal protection and welfare as well as the quality and safety of their products to the consumers.

The two groups proposed conducting four major interdisciplinary thematic lines for the next 5 year period, as follows:

a) ***Disease Surveillance, Prevention and Control Towards a Sustainable Animal Health –*** aiming to advance veterinary sciences and related public health through discovery of the biological principles of animal health, animal disease and related biomedicine with the goal to develop novel prevention and intervention strategies (the 'One Health' concept).
b) ***Clinical Research Towards Novel Diagnosis and Therapeutic Strategies -*** aiming the integration of research activities across the broad field of research including infectious, parasitological and genetic diseases of animals and Man.
c) ***A sustainable Animal Production For The 21st Century –*** aiming to implement an integrated approach to study animal production systems and their profitability, obtained by a more efficient utilization of feed, genetic improvement, reproductive success and animal welfare. Environmental and quality issues are key elements to sustain the development of highly efficient and socially acceptable animal production systems.
d) ***Advanced food processing, quality and safety: new challenges -*** aiming to assess and manage emergent technologies allowing for a chemical and biological hazard control, eventually present in traditional processes. This line deals with: residues of drugs in food, antimicrobial resistance of bacteria found in food matrix; surviving and ecological behavior of micro-organisms in food processing; environmental contaminants of food chain and new generated compounds by physical and chemical treatments applied to new ingredients and new food.

With this current structure, CIISA aims to enhance chances for scientific innovation at the interface between disciplines and to create a stimulating and attractive scientific environment. In addition, CIISA is committed to establish rational mechanisms of sharing research facilities and to enlarge its available instrumentation to allow extending its

research capabilities. Overall, we expect to strengthen our position for the acquisition of external research funds.

Common **objectives** of these lines are:

a) To **serve the society** by creating a challenging environment with cutting-edge multi-disciplinary expertise and research facilities that is attractive for a variety of stakeholders;
b) To offer a **broad spectrum of training** for MSc and PhD students – under this strategic program CIISA wishes to recruit internationally, highly motivated graduates, with excellent scientific potential, and with a solid background in biomedicine, biology and related scientific areas.

CIISA has developed a comprehensive strategic plan that is structured to stimulate future research in the various thematic lines:

a) Develop dynamic, innovative research programs that are globally competitive and have a local impact;
b) Ensure a continuous high-quality output so that its researchers are able to attract sustainable funding to further develop its programs;
c) Facilitate the development of multi-disciplinary teams aligned to various research themes;
d) Foster strategic alliances with other local and international institutions;
e) Attract increasing numbers of local and international postgraduate students.

CIISA looks at itself as the scientific floor for innovation and debate that benefits veterinary practice, animal production, public health, economy and the Society as a whole. To implement this strategy CIISA has established a representative, flexible and transparent structure, able to communicate efficiently with its members and to encourage group work in a participative way.

**View from the Outside…**

It is rather interesting to review the reports and main recommendations of the evaluation panels, as they document how CIISA is viewed from the outside. Although the results from this assessment exercises were sometimes received inside as not very fair, mainly because the evaluation panels almost never included veterinarians, they were in fact determinant for the progression and development of the center.

CIISA was first evaluated in 1996 in the scope of activities carried between 1994 (year when pluriannual funding started) and 1996. Since then, international panels periodically evaluated it in 1999, 2007, 2013 and 2018.

As a result of the 1996 first evaluation in which CIISA was rated "very good", pluriannual funding was raised significantly and almost doubled, allowing for a very expressive implementation of the internally funded projects

It was evaluated again in 1998–99. The international panel composed by 6 members visited the center in the 5$^{th}$ of November 1999. In the year 2000 we received the panel's report (reproduced here in italic) and the overall classification was GOOD:

*The panel was positively impressed by the good feeling among people working at the centre. The staff is motivated and willing to improve the quality of the research in the excellent new facilities. The opportunity created by the moving from "Gomes Freire" to "Ajuda" should be used to reorganise the centre as is suggested below.*

*The scientific productivity of the centre is acceptable but could be improved, especially in terms of articles in international journals. There is an excessive number of articles in proceedings in comparison with those in well-known journals. The ratio of the number of articles per money spent in projects is also below the international standard.*

*There is a noticeable difference in the quality of the research between the various nuclei. The teams working on infectious diseases and in animal nutrition seem to be at a higher level in comparison with the other teams.*

*The gap of knowledge between nuclei may increase due to a lack of co-operational work within the centre. The panel sees the need for reorganising the centre by merging some nuclei into larger units identified by a common research scope or objective. The new facilities can be a powerful tool for encouraging the synergies between research teams. Besides the increased co-operation between nuclei the centre should also improve co–operative research with foreign research institutions e.g. through EU projects.*

*The clinic unit is making little research. It will be difficult with the present staff to do teaching, to have the new hospital running, and to do research simultaneously.*

*The panel noticed a lack of information on research management. Also some emphasis should be put on information acquisition. As a result of this isolation in scientific terms the panel noticed a lack of contact with other foreign institutions or groups working in the same or close related subject matters e.g. African swine fever.*

*The research work on food science is rather poor and should be completely restructured since food quality and safety has become a very important area of research.*

*Research on economics is also weak and does not involve policy e.g. evaluating the cost of eradicating a disease.*

*Recommendations: The panel sees no purpose in the work of the tropical nucleus. There is also no apparent goal for the studies in tropical animal nutrition. However, they could be continued in collaboration with the nucleus of animal nutrition.*

*The panel had the impression that there are too many research objectives, the efforts are too dispersed, and therefore the research does not go deep enough into each subject matter. There is a need to concentrate efforts and to increase the critical mass of the various research teams. Sometimes research seems to be confused with teaching needs and not addressed to problem solving.*

*There is very little active research on animal production and the little research existing requires closer interaction with agriculture. There is also a need to integrate the chain from the farm to the slaughtering house including the environmental impact of the activity. One possible way to develop the perspective could be to have joint projects with institutions more devoted to agriculture. The panel noticed that there is no research on swine and poultry production despite the enormous importance these activities have in the country.*

*The centre has made a large effort on outside funding since about 90% of the projects are externally financed. The amount of money for research is at an acceptable level and seems to be sufficient to support an acceptable research production.*

*The panel considers that the centre has a large potential for improving the quality of the research by a rational use of the research staff and the new facilities. The centre could develop a few areas of excellence starting with those nuclei that are already more advanced and have an higher level of internationalisation.*

Next evaluation started in 2003, again by an international panel of 8 members covering the *Agricultural Sciences* research units of which 6 were French researchers from the Institut National de la Recherche Agronomique (INRA) and one from Euragri Agricultural Research Department, from Holland. Like in 1996 and 1999, evaluations were based on written reports prepared in advance by the centres, on-site visits and informal discussions with research leaders and individual scientists.

The panel issued a global report on the 23 institutions in the Agricultural area, visited by the panel throughout the country. There was no individual report. However, extracts that refer to CIISA were:

*(…) In several areas, the research units evaluated by the Panel are at a good level and have some potential for reaching a level of excellence, under certain conditions (…)*

– *Animal health and production: the Panel was impressed by the efficient coordination of original research on numerous topics at CIISA –Veterinary School in Lisbon. The level of research is high and the publications are of particular interest. However, it seems that this Centre should move towards two directions. A first one is to divide CIISA into 2 or 3 sub-centres, around one thematic. A second one is to give to CIISA a new mission of coordination of veterinary science in Portugal, in order to improve the quality of research in other centres (especially CECA at Vairão, in Porto, CECAV at Vila Real and IISA at ISA-Lisbon), to better link this research with INIA, and to avoid double lines of research between teams…*

In the 2007 evaluation, another panel, again rated CIISA as "Very Good" and commented:

*CIISA is one of the leading units in veterinary medicine area in Portugal. …The ratio between the veterinarians and the other specialists is almost equal which is considered to be a positive trend. It seems that the structure of the unit with the four groups: Animal Health and Prevention; Pathology and Medicine Biotechnology and Animal Production and Food Safety with a few exceptions is very well and multidisciplinary composed in order to be able to accomplish the respective objectives as: Control of economically important diseases; animal models for important human and animal diseases and safety, quality and control of food production. This role has been shown to be performed with close cooperation with other national (26) and international (25) Universities; official services (34); private enterprises (27); professional associations (8) and other national and international institutions (61). Thus, it is very relevant to the national priorities of the country. To great extent it deals also with the European and African animal pathology and epidemiology problems. The organization of CIISA is realized by Scientific Board*

*which integrates all researchers. The funding in the period 2003 – 2006 was over 5 mln € for every year (trances between 5 – 5, 5 mln €). During this period the FCT and Government support has not been increased. However recognizing the importance of CIISA to become a Center of Excellence the FMU allocate plural funding for more than 82 projects like: preliminary studies for promising research areas; academic programs – MS; PhD and Post docs; funding 'in – between' projects; active participation in scientific meeting; equipment maintenance and repair publications; organization of training courses, workshops and congresses and hiring young researcher. Because of the strong activities of the Animal health and Prevention group almost 50% of income of the unit is due to funds coming from FP of EC.*

*The publications have shown significant and impressive increased ratio especially the articles in international journals with 65% (216). The ISI index as a whole has been also improved very much. Most of the publications demonstrate a good nature of fundamental and applied research. The unit is located in relatively new building. The panel however got the impression that most of the recent facilities and the equipment slowly are getting out of date and need renovation. As a whole the unit has one of the most well combined and modern infrastructure in Portugal.*

*The extension service is very good. The hospitalization is done in place with small and big animals. It helps the unit to get a good image in the society as well. Training of young researchers and students is very satisfactory. Organization of workshops is regular. Interdisciplinary activities are very good as a whole. However, more integration between the groups is definitely required in order to be more successful in the future.*

*Additionally, the panel recognizes that the research which deals with drought tolerance in maize and biofuel studies in Biotechnology and Production group could be much better developed if they were integrated into the research of ICAM unit N 115 in Evora or the Centro de Botânica Aplicada à Agricultura AGR – LVT – Lisboa 240. Interactions with other national and international research units and companies. The tendency to improve essentially the cooperation and the integration into national and international programs and initiatives should continue.*

*Some priorities should be identified for the better internationalization in order to avoid the dilution. Participation in international research programmes (EU etc.) The good examples which already exist in some of the groups like Animal Health and Prevention should be followed from the rest in order to achieve the goal of excellence. Knowledge and technology transfer are well developed. Outreach activities are welll developed. As far as attitude and work environment, the leadership of the unit and the groups showed clear organizational and motivation capacity. The groups and the unit meet regularly.*

*The researchers are committed. They respect each other and the leadership as well. Most pertinent comments and recommendations: The Panel has observed some improvements from the last evaluation exercise and thinks that the unit developed sufficient potential to continue to improve its entire R&D work. The Panel could make the following recommendations:*

- *To develop more strategic vision and partnership in both national and international level.*
- *To develop External Advisory Board and on the base of this more strategic leadership.*

- *To apply more actively into the EC framework programs and Ministry of Health care in more coherent approach.*
- *Better exploitation of the equipment and the facilities.*
- *To strengthen the socioeconomical and socioethical research and policy.*
- *Integration into LEAF is highly desirable.*

The last evaluation, of which results are available, occurred in 2013 although the evaluation panel only visited CIISA in 2014. Again, the classification was "Very Good" and the panel issued the following report:

*CIISA is a unique center providing very good veterinary research, with interesting applications also in biotechnology and food science and industry. Emphasis on societal and agricultural impact of animal science has been appreciated. The center features impressive facilities that are of outmost usefulness for carrying state-of-art veterinary research, from basic science to field applications and services to the public. The center might have a central role not only at regional but also at international level. The further improvement of the indicators of innovation will be highly beneficial for the center as the number of patents and of other indicators are not as successful as it would be expected from this center. Provisions have been taken to substantially increment these indicators in the future.*

*The center is able to raise a substantial amount of research funding, with remarkable success in international competitions. However, the number of published research is lower than expected, but several researches are published in high impact journals for the sector. The Centre boasts a large research team and also demonstrates a considerable number of worldwide collaborations. Many of the senior scientists within the team are very experienced and well respected in their field of activities. The strength of the research is mostly in the translational stage, which is evidenced by the significant outside funding acquired from European programs. The international attractiveness in terms of funding is also growing, which is also excellent. The international outreach is very strong.*

*The center has a solid strategic program, which mostly builds on previous achievements and on the consolidated expertise of the center. Competence on biomedicine and animal science is rare, and the center surely has a relevant place in the regional strategies. At international level, current and programmed research may guarantee continued visibility and recognition to the center. The strategic plan could be bolder and more careful when dealing with enhancing the productivity of the center, especially in terms of published research. The center has a clear and straight focus on animal science, but it has also undertaken interesting collaborative research on agronomy and food science, thus increasing the degree of multidisciplinary research, as needed.*

*The proposal appears to be well organized and logical. The research team undoubtedly has sufficient critical mass to achieve the aims that it sets out. In general, the requested budget for the strategic program seems in line with the budget received by FCT in the past five years. Strangely, obsolescence of the equipment is perceived as weakness, but only a limited part of the budget is dedicated to the objective of its updating. In general, it seems that the program aims at consolidating and stabilizing existing facilities, without providing leaps toward groundbreaking and innovative studies or applications. Integration of the research center on the host University is complete and very positive, as the center is perceived like an essential part of the University itself.*

*Interviews to students, post-docs and integrated members of the center indicated a very good feeling toward the center activities and the capacity of the center to offer education and career opportunities.*

*Overall Conclusions: It is confirmed also by the site visit that the center is able to provide a very well established and comprehensive research facility in the field of animal and veterinary science, offering remarkable services and applied research for the development of animal and food science, and agriculture. The research groups are well assembled and of good scientific value and international reputation, as shown by publication number and especially by the quality of some research outputs. The capacity to raise funds, and to cooperate with industry is unquestionable. The recruitment policy is wisely built, considering a large investment in training and transfer of knowledge to young researchers. The solid program seems somehow lacking groundbreaking innovation, and strategic vision, mostly aiming at strengthening the current position of the center. This is certainly valuable, especially considering current shortage of funding, but the center might undertake a bolder turn, which would allow it to grow further at national and international level.*

In 2018 the last evaluation panel visited us again and CIISA is awaiting the final report.

The exercise of reviewing the external analysis that different expert panel have made, through the years, of the center, allows to conclude:

1) A great evolution has occurred along the 25 years of CIISA's life.
2) CIISA has been increasingly perceived internationally as a major driving force for research in veterinary sciences in Portugal.
3) CIISA finally overcame the initial individualistic trend of its research teams, and is also recognized as the main and only face of research at FMV.
4) CIISA continues to implement and expand the original objectives successfully, as revealed by the number of research projects already concluded and in course, funded by several institutions and in close collaboration with national and international partners.

**Final Remarks … and the Future Looks Bright**

Following the 2013 tremendous efforts of the coordination and executive board to mount the Self-evaluation report and to plan re-structuring, CIISA went to elections in May 2014 and I decided that I should no longer be a candidate. After 22 years of dedication to development of our research center and many consecutive elections won as the coordinator, I decided it was time for new teams and new ideas to take place. After all, the child born in 1992 has reached adulthood and no longer needs the former guidance.

The modern societies are increasingly confronted with animal health related issues that, in the last few years, were shown to have considerable impact in the global economy and in public health. In addition, claims for the development of novel environmental sustainable systems for animal production and agriculture are justifiably increasing. CIISA is in a privileged situation to study the main aspects related to animal health and production, considering the multidisciplinarity of its research teams. The main contributions of

this center to significantly improve animals' and consumers' quality of life, are noticeable in all main fields of veterinary sciences. Major impacts of CIISA's research, have been noticed in the past and are expected in the future, in the development of novel diagnostic strategies and therapies, innovative biotechnological products, new sustainable production systems and to significantly improve food safety and nutritional quality of animal products.

Now, that we are celebrating his 25$^{th}$ birthday and Jubilee, I want to wish that this child, young adult, never grows old. I know he won't because it keeps in a great company. All of you, young researchers, full of energy, scientific curiosity and irreverence. The main qualities that, together with freedom to choose your one ways, are the most important characteristics needed to accomplish great Research!

Long life to CIISA.
Luis Tavares