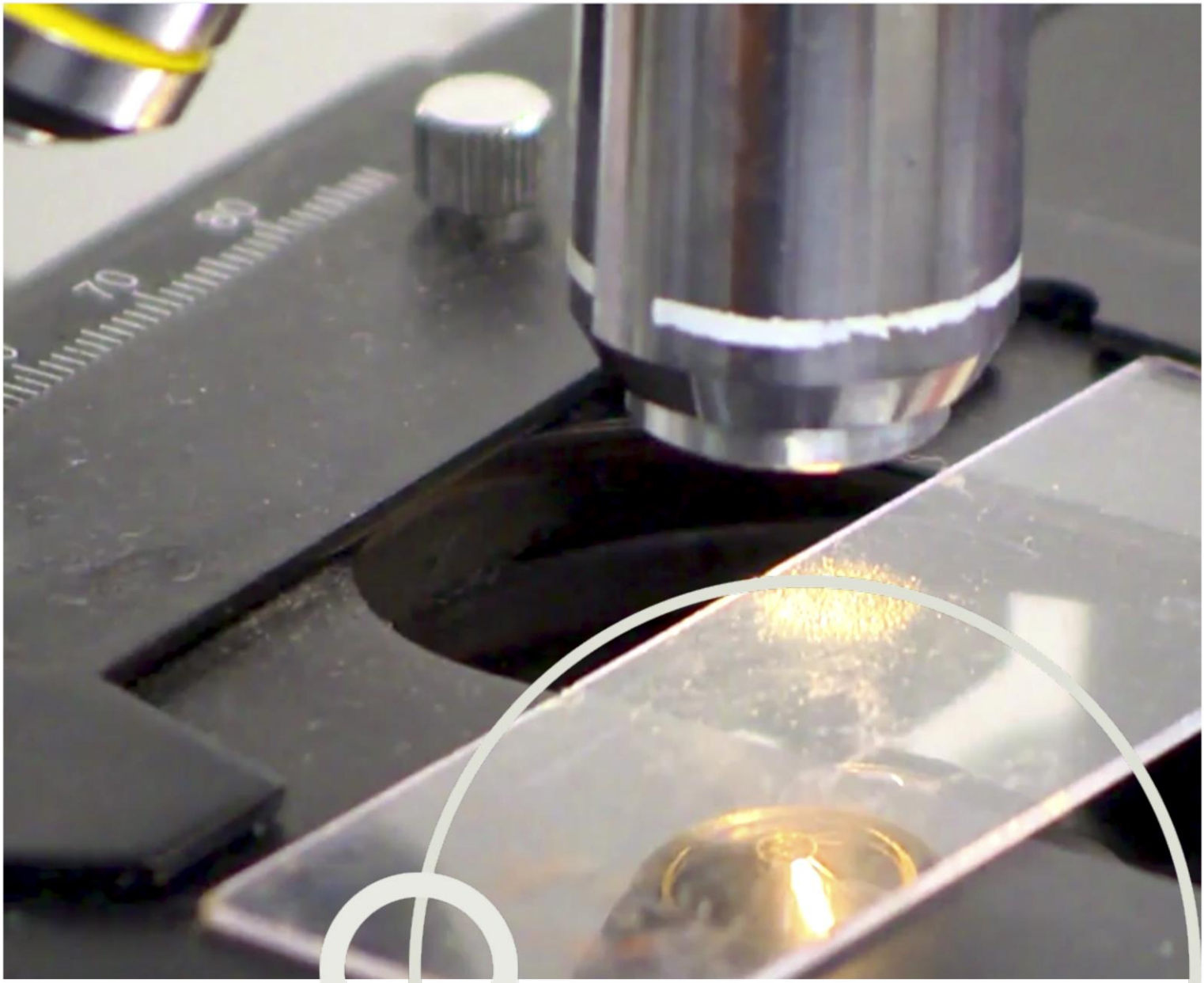

Mid-term Evaluation of Institutional University with Universidad de Oriente (Cuba)

February 2018

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vlir uos 20 YEARS

SHARING MINDS, CHANGING LIVES

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ACRONYMS

ACTAF	Cuban association of Agroforestry Technicians
AECID	Spanish Cooperation for Development Agency
ANPA	National Association of Agricultural Professionals
AZUCUBA	Sugar Entrepreneurial Group
BIOECO	Research Centre of Biodiversity and Ecology at the East of Cuba
CAPES	Coordination of Improvement of personnel of higher level
CEBI	Centre of Industrial Biotechnology Studies
CIM	Marine Research Centre
CITMA	Ministry of Science, Technology and Environment
CNEA	National Centre of Applied Electromagnetism
CNPq	National Counsel of Technological and Scientific Development
CONACYT	National Council of Science and Technology, Mexico
CUJAE	Universidad Tecnológica de la Habana "José Antonio Echeverría"
CYTED	Science & Tecchnology Iberoamerican Programme for Development
HEI	Higher Education Institution
ICIDCA	Cuban Research Institute for Sugar Cane sub products
INIFAT	Research Institute for Tropical Agriculture “Alexander von Humboldt”
INIVIT	Research Institute of Tropical Viandas
INCA	National Institute of Agrological Science
INRH	National Institute of Hydraulic Resources
IPRs	Intellectual Property Rights
IUC	Institutional University Cooperation
KU LEUVEN	Katholieke Universiteit Leuven
MES	Ministry of Higher Education
MINCEX	Ministry of Foreign Trade
MINFAR	Ministry of Cuban Army
MINSAP	Ministry of Public Health
PSU	Programme Support Unit
TOXIMED	Centre of Toxicology and Biomedicine
TTO	Technology Transfer Office
TT	Technology Transfer
UA	University of Antwerpen
UC	Universidad de Camagüey “Ignacio Agramonte Loynaz”
UCF	Cienfuegos University

UCI	Universidad de las Ciencias Informáticas
UCLV	Universidad Central “Marta Abreu” de Las Villas
UDG	Granma University
UH	Universidad de Holguín
UHA	Havana University
UH	Universiteit Hasselt
UHOLG	Holguin University
UG	Guantánamo University
UGent	Ghent University
UO	Universidad de Oriente
UPR	Universidad de Pinar del Río “Hermanos Saíz Montes de Oca”
VUB	Vrije Universiteit Brussel
WIPO	World Intellectual Property Organization

PREFACE

We wish to thank all Cuban and Flemish participants for their transparency and commitment in this evaluation process. All team members facilitated access not all only to all relevant documents and outputs of the project but also to other stakeholders, providing a complete vision of the impact of the project. We were overwhelmed by their engagement and passion with regards the different activities of the project.

Special thanks to the Ministry of Higher Education of Cuba (MES), UO Direction Board and the IUC UO Project Support Unit. It is our sincere wish that this evaluation exercise will be of help to all stakeholders to create sustainable impact at individual, institutional and societal level.

FocusUP, Antwerp, Belgium, 2018

Disclaimer

This report represents the views of the members of the evaluation commission. It does not necessarily reflect the opinions of the VLIR-UOS. The evaluation commission bears the sole responsibility for the report in terms of content, as well as its structure.

EXECUTIVE SUMMARY

Strategic Level

Programme design vs. Cuban higher education system

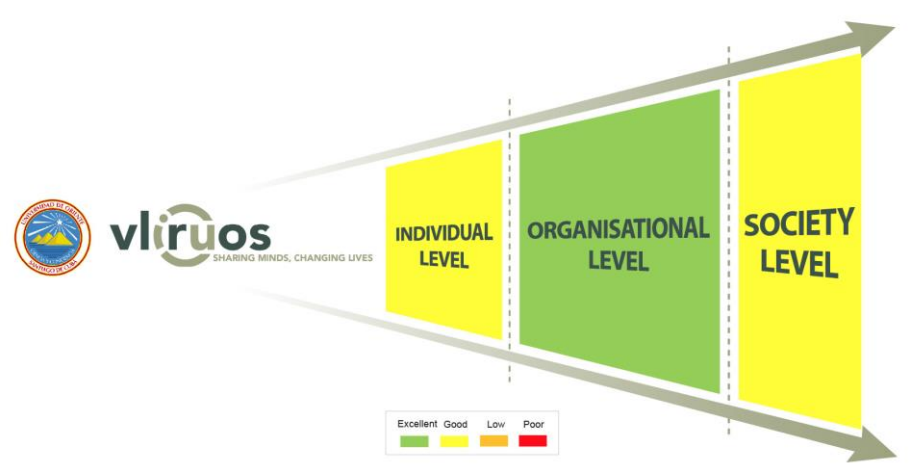
The long-term cooperation scheme proposed by the VLIR-UOS Institutional University Cooperation (IUC) programme fits well in the centralised Cuban higher education system. The Cuban Ministry of Higher Education (MES) fully supports the development of a programme where higher education is not only considered a provider of education and research, but also an important actor for the socio-economic development of the municipality/region/country. The MES' support to VLIR-UOS initiatives not only covers the general backing with issues at national level (procurement, etc.); MES was an active participant in the analysis phase and has a crucial role in the development of the project by disseminating and institutionalising the results for the whole Cuban higher education system. The Flemish side also provided political and technical support in Cuba via the Belgian ambassador, the visit of Flemish Government representatives, or the technical visits of VLIR-UOS staff.

Moreover, the programme matched the broad national development policies (ICT, biotechnology, energy, etc.). This fact also facilitated the cooperation with several governmental bodies, providing closer contact with key Cuban stakeholders within each topic.

Impact

IMPACT / Introduction

The returns and benefits of higher education in developing countries are significant (Montenegro & Patrinos, 2013[1]). The role of higher education in the socio-economic development process of a developing country is crucial; Macro and micro level studies show that Higher Education Institutions in developing countries could act as engines of social mobility, innovation, and economic growth. Evaluators consider that the **more a higher education system is developed in terms of academic and research structure, the more it will be able to take advantage of the investment**. This is the case for the Republic of Cuba.



The IUC with the University of Oriente provides evidence of this. Higher Education Capacity Building projects in developing countries are basically **unidirectional**; partners from the North transfer know-how to partners in the South with limited interactivity for joint academic and research activities. The main reasons for that is the limited academic and research structure, both at institutional and national levels, together with the absence of a critical mass of academics able to carry out joint activities. However, in the case of the Republic of Cuba, in a relatively short period (2-3 years) the academic and scientific relationship between Flemish and Cuban universities has become **bidirectional** via joint research initiatives (publications in peer reviewed journals), research stays (on both sides), etc.

[1] Montenegro, C., & Patrinos, H. (2013). *Returns to Schooling Around the World*. Background Paper for the World Development Report 2013. The World Bank.

IMPACT / Individual level. Impact of the IUC at individual level is **HIGH**. Interviews and surveys show the specific impact of the project activities in terms of research productivity, individual attitude changes, improved scientific networking or academic mobility of participants. One example of how individuals took advantage of the project activities and showed their productivity is the fact that a high percentage of the research stays in Flanders were extended with the support of additional funding from other donors, including enterprises. Another example is the **improved positions** (new deans, vice-deans, lab directors, etc.) in the universities of different participants in the programme. However, UO did not get rid of the general trend in the country with regards to government professionals moving to the private sector. There are no clear policies promoting the retention of the staff.

IMPACT / Organisational level. Impact at organisational level could be considered **VERY HIGH**. We found consistent evidence of the impact of the project via changes in organisational capacity (research or academic capacity, infrastructure), but also in specific institutional policies which have improved the general performance of the Universidad de Oriente. The widespread **Interdisciplinary Research Culture** promoted by the IUC is one of the main outcomes of the project. This new culture is visible at different levels and has a direct influence on the research priorities of the institution. In the same direction, **ownership** is very high. Key stakeholders at UO (academic staff from faculties, departments, etc.) are very committed to the project. This, together with trustful leadership and appropriate management procedures, provided a good background for a high level of **effectiveness** of capacity and institutional building activities. Examples of impact at organisational level may be found with regards to a new academic offer, infrastructure or new research policies.

IMPACT / Societal level. Impact at societal level is **HIGH** and has great potential for the next phase. This has been facilitated by the role that universities play in the Republic of Cuba in their local context. Higher Education Institutions have universities' headquarters to extend their influence within municipalities and regional actors. The activities developed in the framework of the programme with local or regional stakeholders are contributing to the economic and social development. Evidence of this kind of impact has been identified via **case studies**, as most of them have "emerged" naturally from different activities. Some of them were not foreseen in the initial work plan. Those case studies show direct impact in specific economic sectors, education or the public health system. In 2.4examples of impact in local enterprises, hospitals or schools can be found.

Operative Level

Experienced and relevant participants

Cuban participants are taking advantage of previous experiences of cooperation in the field of higher education. UO had some interesting projects in the past in the Eastern region, which provided a good background for the VLIR-UOS initiative. The lessons learned there have been applied in the current project on different levels (procurement, networking, etc.).

Average age of participants at UO is around 37, with gender balanced and high academic profile (around 50% of PhDs), which will clearly contribute to the sustainability of the activities on the one hand. On the other hand Flemish project leaders have wide experience working in the higher education sector in developing countries. Working together and facing different challenges have also promoted bonds of friendship between participants, facilitating the achievement of the objectives of both projects.

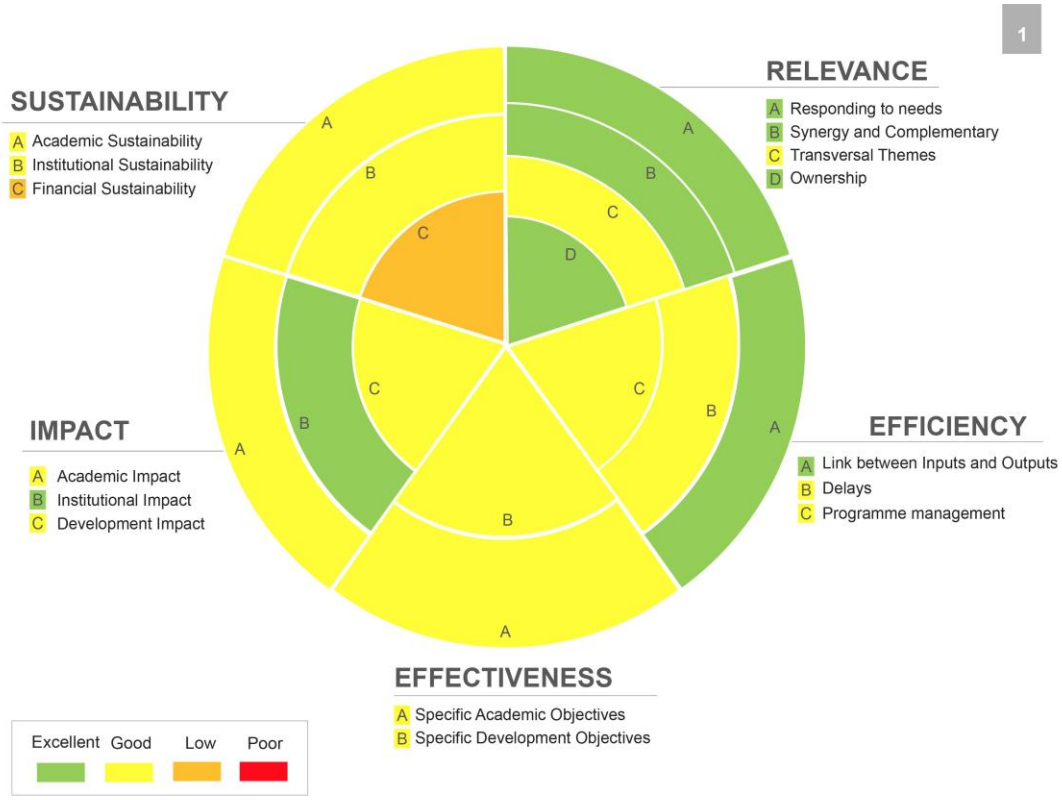
Management and communication issues

Evaluators identified three general issues that have provoked management and communication problems in the first phase. First issue is the low English proficiency level of some Cuban participants, mainly students, that motivated different problems in the execution of the activities (delays in delivering PhD dissertations, difficult communication in trainings, etc.). Second issue was the selection of PhD candidates for different programmes - not all - from UO, where Flemish counterparts did not have the opportunity to decide. That issue is in the process of being solved, with new guidelines and a more transparent process. Third issue is the lack of a qualitative assessment at project level (e.g. trainings), which should be organised in direct interaction with UO hierarchy.

Relationship between Cuban VLIR-UOS (IUC / Network)

Evaluators did not find any overlap between both programmes, but quite the opposite. Team work provided several benefits for both initiatives, and the communication and transparency were very high at project management level.

Summary of Scoring by Criteria (Programme Level)



Relevance

1.1. Responding to needs Score**: Excellent**	- The effects of the programme on the university are quite extensive. - A good example of this is the TTO created, based on the needs identified by the institution in several analyses.
1.2. Synergy Score: **Excellent**	- Synergies have been considered both at project & programme level; - Joint PhD programmes or additional funding from other donors are sound examples.
1.3. Transversal Themes Score: **Good**	See 1.6
1.4. Ownership Score: **Excellent**	- Evaluators may confirm high ownership, mainly because of the new academic programmes & labs. - For instance, labs are fully exploited for in UO research and academic activities.

Efficiency

2.1. Link between inputs and outputs Score: **Excellent**	- Assessment of financial resources and corresponding activities show high efficiency. - Financial management, also considering the difficult context, may be considered excellent.
2.2. Delays Score: **Good**	- Procurement processes are slow because of the political situation (embargo) and long bureaucratic processes. - However, PSU managed to find solutions (most of the time).
2.3. Programme management Score: Good	- Management and organisational structures (steering committee meetings, PSU, etc.) worked properly during phase 1. - Only 1/8 of the projects had problems related to management.

Effectiveness

3.1. Specific academic objectives Score: **Good**	- From the eighteen objectives, seventeen were fully achieved and some of them have overcome the original proposal. - Evidence found about the role of the programme in the implementation of partners' policy/actions for research.
3.2. Specific development objectives Score: **Good**	- The programme has contributed to the foreseen specific development objectives, achieving an interesting impact in the Eastern region and always considering local and national priorities. - See case studies for examples of impact at societal level (2.4).

Impact

4.1. Academic impact Score: **Good**	- The academic impact of the programme at UO is quite large - The new academic offer (PhD programmes, etc.) provides interesting added value to the UO studies.
4.2. Institutional impact Score: **Excellent**	- Institutional impact is considerable: new departments, units, labs, etc. - One attractive example is the created Centre for Advanced Training on Foreign Languages (CATFLAg).
4.3. Development impact Score: **Good**	- There are some good examples of development impact in different sectors: Health, Education, ICT, etc. - See specific examples in 2.4

Sustainability

5.1. Academic sustainability Score: **Good**	- The programme has created the main conditions to preserve the results and positive effects already obtained at UO, at academic level. - New academic offer and research schemes have been put into place.
5.2. Institutional sustainability Score: **Good**	- Decision-making structures are in place, and there is a strong commitment, in order to guarantee institutional sustainability of the results achieved. - In fact, UO has also contributed with additional funding (and human resources) covering some infrastructural and academic activities.
5.3. Financial sustainability Score: **Low**	- Evaluators may not confirm that the financial sustainability will be guaranteed because of different reasons. The most important one is that UO will need some structural changes, , in order to facilitate that departments and faculties may commercialise their services or academic offer. These changes already seem to be initiated at this moment. - The set-up of a TTO is a first step, but this should come with specific regulations and a change in the culture with regards to the new role of the university in the Republic of Cuba (not only teaching and researching but also transferring the technology and knowledge).

1 Introduction

1.1. Background

1.1.1. General objectives and guiding principles of IUC

An Institutional University Cooperation (IUC) programme is a long-term (twelve years) institutional partnership between a university in the South and Flemish universities and university colleges. The programme supports the partner university in its triple function as provider of educational, research-related and societal services. It aims at empowering the local university as to better fulfil its role as development actor in society.

The objectives and content of an IUC partnership between one partner institution in the South and Flemish universities and university colleges are outlined in a *partner programme* (type of technical and financial file)1. All IUC programmes combine objectives of institutional strengthening and strategic thematic capacity building (linked to both institutional priorities and developmental priorities in a specific country). Each partnership consists of a coherent set of interventions (projects) geared towards the development of the teaching and research capacity of the university, as well as its institutional management. The IUC programme is demand-oriented, and seeks to promote local ownership through the full involvement of the partner both in the design and implementation of the programme. At level of change, the concept is such that through a programme approach, greater synergy, added value and institutional impact can be achieved than through a set of individual different IUC projects. Apart from internal synergy, the IUC programme is also looking at synergies and complementarities with other local development initiatives. Although the identification of the fields of cooperation is demand-initiated, as it concerns a partnership, the match with the available interest and expertise for cooperation at the Flemish side is crucial.

The IUC cooperation with a partner institution covers a period of approximately twelve years with two main programme phases -Phase I and Phase II- covering a combined ten years of project execution time. These phases are preceded by a Phase In and followed by a Phase out.

The IUC partner programme is subdivided into a number of constituting projects (research, capacity building and extension-related) which are composed of a number of interlinked activities to be realised in the framework of a partner programme phase (in the IUC programmes under evaluation it concerns a Phase 1 of six years). At programme level the IUCs are coordinated by a local academic coordinator -with the support of top university management- and a Flemish coordinator, appointed by VLIR-UOS, and with him a coordinating Flemish university. The identification, formulation and implementation of each project is managed by project leaders: academics from both the Southern and Flemish Higher Education Institutions. Flemish project leaders are designated by VLIR-UOS on the basis of an open competition.

1.1.2. Subject of the evaluation – Theory of Change of an IUC programme[2]

Every Institutional University Cooperation (IUC) programme is subdivided into a number of synergetic/complementary projects (research, capacity building and extension-related), which are composed of a number of interlinked activities to be realised in the framework of a partner programme phase. These different projects all have their individual results framework and underlying Theory of Change. An IUC is more than the sum of its projects: through programme level management, the scale of the total programme, transversal (institutional strengthening) projects, the interlinkages between the different projects, the support given by the programme support unit and the critical mass of capacity created, an IUC has the potential to empower the local university as a whole to better fulfil its role as development actor in society.

Project level Theory of Change

Every Institutional University Cooperation (IUC) programme consists of a number of 'classic' projects and two or three 'transversal' projects. The classic projects primarily contribute to development changes at impact level, and indirectly also to the institutional performance of the Higher Education Institutes (HEI) and the role of the HEI as a development actor. The transversal projects aim at improving internal services or systems of HEI. This can be in various areas: ICT services, research management, etc. This not only contributes to the different ('classic') projects but also strongly contributes to an improved institutional performance of the HEI.

Classic projects

At the **output level,** VLIR-UOS supports interventions producing different types of deliverables (E.g deliverables related to education improvement, research deliverables, strengthening research or education capacities, infrastructure and equipment, deliverables related to extension). All these deliverables are achieved in partnership with HEIs in Flanders and a partner country. *These outputs are considered being within the sphere of control of the project.*

At **outcome level** (specific objective), we can identify three typical outcomes (improved research practices, improved education practices and new knowledge, applications are created

[2] Based on ToR, p.4-8.

+ uptake by relevant stakeholders). These outcomes are *identified as specific objectives* and can be considered as 'use of outputs': They imply changes in performance, behaviour, etc. *These outcomes are no longer within the sphere of control but are within the sphere of influence of the project.*

At **impact level,** the main change envisaged is always a developmental objective (long-term). Implicitly, it is also about a changed role of the local partner as an actor of change (medium-term). Through a successful achievement at the outcome level, the local actor will inherently become an agent of change for the society. With this change, and the achievements at the outcome level, there will be a sound contribution to development changes. This 'change' will relate to the (external) effects of increased research performance/practices (internal) and/or the (external) effects of improved education practices/performance (internal) and/or the effect of uptake of new knowledge/applications/services (i.e. the effective (external) use).

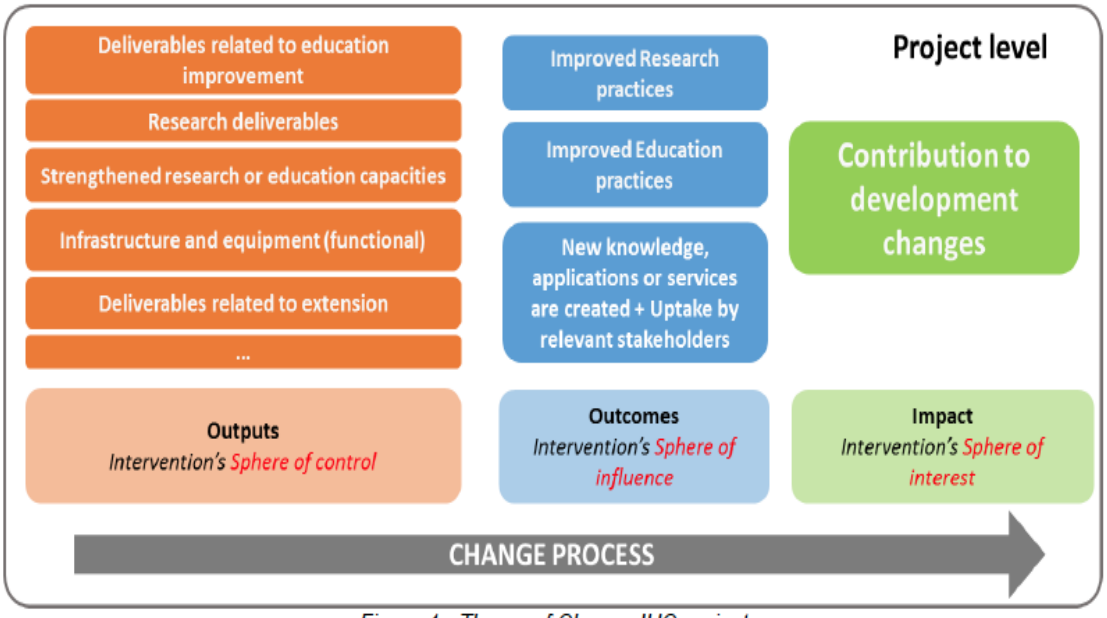


Figure 1 - Theory of Change IUC project

Transversal Projects

In an IUC programme, there is always one or more 'transversal' project. These are projects that have a slightly different Theory of Change. Transversal projects always focus on strengthening organisational capacities in areas such as internal service delivery (e.g. ICT services, research management, etc.), external service delivery (e.g. extension services), managerial capacity. These projects realise several outputs with the aim of improving internal performance. This improved internal performance will contribute to institutional changes, and will also contribute to the other projects of the IUC (e.g. improved internal ICT performance will also benefit the other projects). A simplified illustration of possible ToCs of transversal projects is provided below.

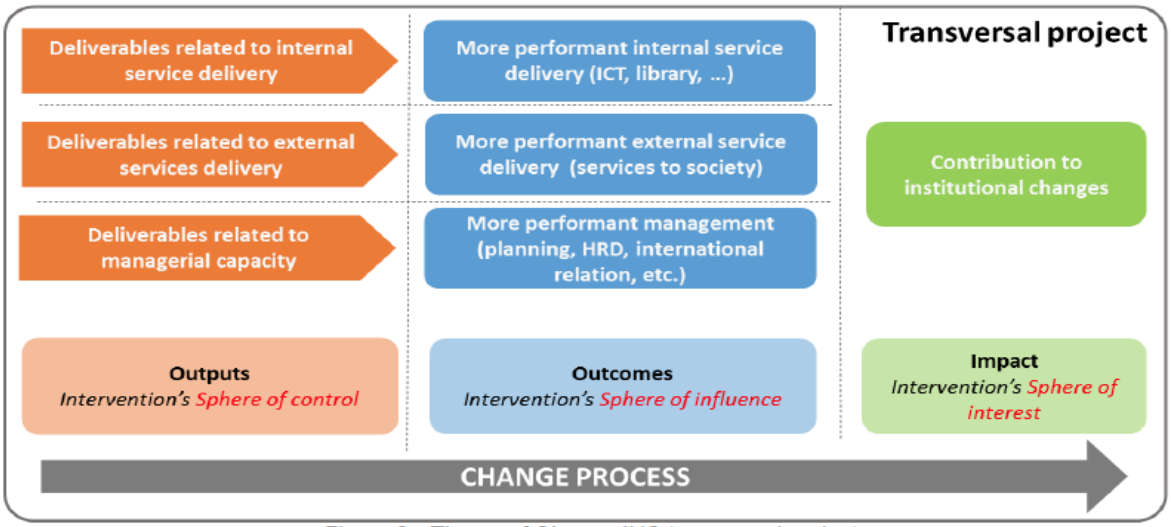


Figure 2 - Theory of Change IUC transversal project

Programme level Theory of Change

The primary impact envisaged by an IUC is to contribute to development changes through the development results of the different projects. A second intended impact is (a) the contribution to an improved performance of the HEI and (b) a changed role of the university as a development actor (strongly related to development changes). This is the programme level impact sought for. A generic and simplified ToC for an IUC programme as a whole is presented below.

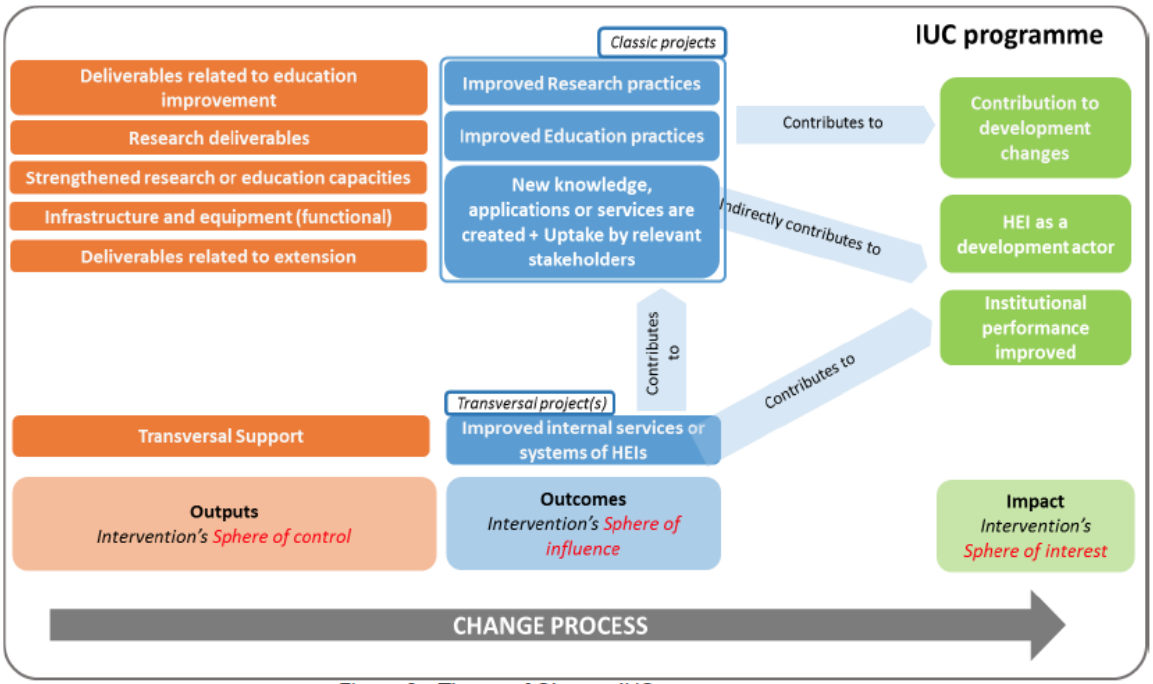


Figure 3 - Theory of Change IUC programme

1.1.3. Objectives of the evaluation[3]

In the ToR the purpose of the mid-term evaluation has been formulated as follows:

1. **Learning**: based on the analyses made by the evaluation team, lessons can be learned about what worked well, what didn not and why. The formulation of these lessons learned will contribute to the quality of ongoing and future IUC programmes in terms of the content and management of the programme, including the overall policy framework.
2. **Steering**: based on the analyses made by the evaluation team, recommendations will be formulated to support decision-making processes of the IUC (at different levels). For a mid-term evaluation, specifically: the evaluation will be used to decide about - and as an input for - the formulation of a second phase.
3. **Accountability**: by independently assessing the performance of the IUC programme (and validating or complementing the monitoring), different actors (HEI, VLIR-UOS, etc.) can fulfil their accountability requirements.

The evaluation's primary objective is to evaluate the performance of the IUC (programme level and project level). This is the basis of every IUC evaluation. Next to this objective, final IUC evaluations also analyse the prospects for the post-IUC period:

1. The performance of the IUC needs to be evaluated on the basis of the OECD-DAC criteria for development evaluation (+ one additional criterion): **scientific quality, relevance, efficiency, effectiveness, impact,** and **sustainability**. For mid-term evaluations, a particular focus needs to be given to **efficiency** and **effectiveness**.
2. The follow-up plan of the programme for the second phase (cf. self-assessments) is also evaluated. The follow-up plan needs to further guarantee capitalisation, exploitation and vulgarisation of achievements of the first phase, sustainability at institutional level (and research groups), and the impact of the university on development processes in the surrounding community, province and eventually in the country.
3. What the influence of Universidad de Oriente is in being a regional university on the actual implementation of the IUC programme.
4. Is there any overlap between the IUC and the 'NETWORK Cuba programme'?

[3] Based on ToR, p.15-16.

1.2. Context

The Republic of Cuba is a free socialist, sovereign, and collective State. Cuba is an archipelago located in the Western- most part of the Caribbean Sea, comprising the island of Cuba, the Isla de la Juventud, and some 1,600 smaller islands and keys, for a total land area of 110,860 km^2. Cuba is the largest island of the grouping of the Caribbean, situated west of Hispaniola island (Haiti and the Dominican Republic), and 145 km South of Key West, Florida (US).

Cuba is divided into fifteen provinces and one special municipality (Isla de la Juventud). The former province of La Habana was recently (2010) divided into two new provinces: Mayabeque and Artemisa. 75.8% of Cubans live in urban areas. In recent years, population growth has slowed significantly. Cuba is characterised by uniformity in the geographical distribution of its population and the variables that comprise it. The central provinces and the capital have older populations.

Cuba has been facing various problems that have interfered with its development. After the disintegration of Eastern Europe, more than 85% of the trade was lost. The most important export markets disappeared, as well as the suppliers of industrial raw materials and other resources. Moreover, the tightening of the US blockade against Cuba makes normal trade and foreign investments even more difficult. The increase of the oil price and the decrease of the prices of Cuba's export products on the world market have resulted in a serious decline of the income of hard currency. Finally, we also have to mention natural disasters that can affect the region (hurricanes, droughts).

Cuba's current general development strategy to continue its economic growth is based on the development of services as means to raise hard currency, especially services concerned with health and tourism, among others. Also the production of pharmaceutical compounds, medical equipment, and software are very important, as well as the introduction of ICT in the production and the service sectors.

Another important element of the national development strategy has been the significant reduction of energy consumption through an increased energy efficiency. The use of renewable sources of energy and the distributed generation of energy. Because this development strategy is based on internationally recognised services with a high added value and on the introduction of the scientific development, it demands from higher education the development of its human resources and scientific research.

The Communist Party Congress of April 2011 decided on an important number of economic reforms amongst other the liberalisation of a limited form of free enterprise and the reduction of the number of civil servants. This new characteristics of the economic and social policy were approved as the programmatic platform for the future development of the country.

The system of Higher education in Cuba is coordinated by the Ministry of Higher Education.

1.3. Evaluation Methodology and process

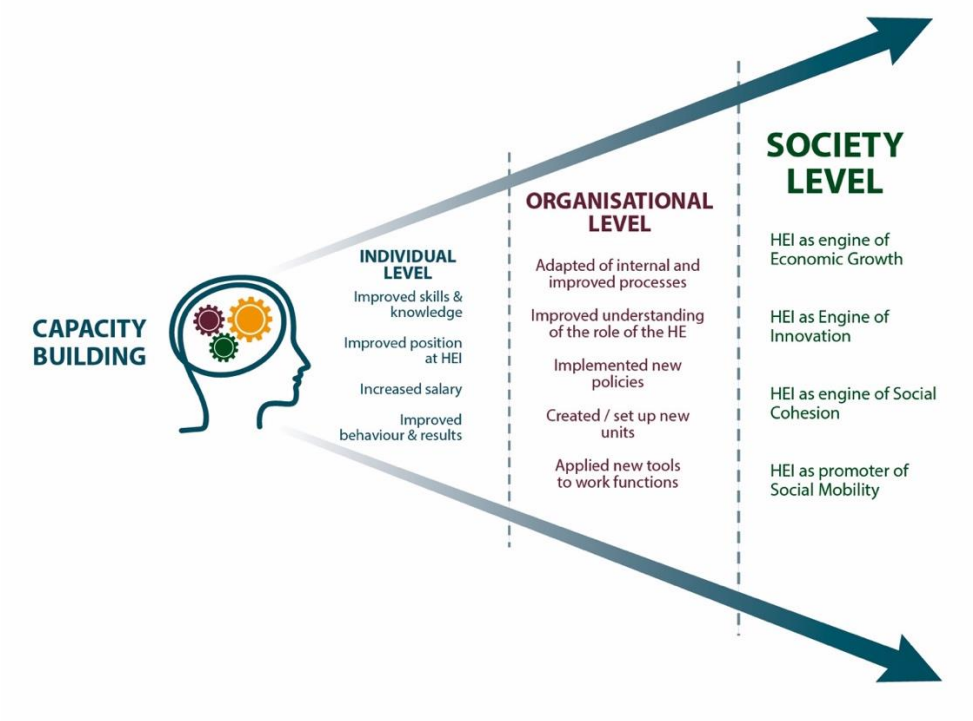
1.3.1. Evaluation Framework

Following Baser and Morgan (2008)4, there are three levels of capacity: a micro or individual level (new skills), an organisational level (new policies, institutional building) and a macro or society level (including any activity which could affect the enabling environment).

The conceptual framework applied to this evaluation is represented in the next figure. This figure helps to explain the overall evaluation framework of the programme logical intervention and results. This is a simplified model, not pretending to include all potential elements affecting this type of intervention. The basic idea is to identify the relationships between.

The logical and expected cause-effect relationships between inputs, outputs, outcomes and impact (considering the Theory of change of the programme as reference).

The effects at different levels of the programme/intervention.



Following this basic assumption, there are different levels of impacts/benefits of Higher Education, and there are also different levels of capacity development that could be applied in this evaluation framework:

4 Baser, H., & P. Morgan (2008). Capacity, Change and Performance Study Report. (ECDPM Discussion Paper 59B). Maastricht: ECDPM.

At **individual level** the effects are related with improved knowledge, increased management skills and improved behaviour/results applied to Higher Education. As a consequence, beneficiaries are able to improve their individual performance, including social skills and networking.

At **organisational level**, beneficiaries may apply their new knowledge in improving either the units organisational structure and/or its organisational processes. This results in better internal coordination, as well as in increased and improved relationships with their local environment. Enhanced interaction with the local environment basically allows achieving more relevant teaching and research for the socio-economic ecosystem.

At **society level**, universities are expected to materialise this more relevant teaching and research with specific agreements and contracts with the local industry and/or society, on placements for students or applied research that meet the needs of the enterprises and other stakeholders. The impact at societal level/long term would include aspects like social cohesion or its role as engine of innovation and promoter of economic growth.

1.3.2. Criteria

According to the ToR, the following criteria must be evaluated at programme level as well as at project level: scientific quality, relevance, efficiency, effectiveness and sustainability. We decided to subdivide each of these criteria:

Criteria	Sub-criteria
Scientific Quality (project level)	Quality of Research Quality of Education
Relevance (programme & project level)	Responding to needs Synergy & complementary Transversal Themes Ownership
Efficiency (programme level)	Link between inputs and outputs Delays Programme management
Efficiency (project level)	The Intermediate results have been delivered Relationship between objectives, results and means Project management
Effectiveness (programme and project level)	Specific Academic Objectives Specific Development Objectives
Impact (programme level)	Academic Impact Institutional Impact Development Impact (impact on society)
Impact (project level)	Individual Impact Academic & Institutional impact Developmental Impact (impact on society)
Sustainability (programme and project level)	Academic & Institutional sustainability Financial Sustainability

According the ToR, each of the (sub-)criteria should be scored using the scores: excellent, good, low, poor. We developed a generic scoring system which can be found in the table below. A full description

of the criteria can be found in annex 4.1. From the table below, it is shown that the scores are directly linked to the recommendations. The lower the quality, the lower the score, the more important the recommendations. For each of the criteria, the number of the recommendations refers to the recommendation formulated at the beginning of the report. This allows us to directly demonstrate the link between the analysis, the scoring and the recommendations.

Scores	Definition Scores
4 – **Excellent**	The overall (criterion) is of excellent quality. Additional measures are not needed.
3 – **Good**	Minor room for improvement exists, however with minor effect on (criterion).
2 – **Low**	Major room for improvement exists, with a potential of major effects on (criterion) of the programme/project.
1 - **Poor**	The (criterion) is of poor quality and extra necessary measures are urgently needed to realise the (driterion).

1.3.3. Methodology

The following phases in the methodology can be distinguished:

Deskbound research	Reviewing project documents (reports, LFMs, etc.), Reviewing self-assessment reports, deliverables, KRA Indicators (see annex 3.6), etc.
Interviews/North	Interviews with Flemish project leaders via Skype (**4**) or live at VLIR-UOS premises (**5**).
Interviews/South	Interviews with Cuban project leaders, MES (Ministry and representatives), and relevant stakeholders during the mission to Cuba (16/01/2018 – 03/02/2018). **19** interviews.
Online questionnaire	(SurveyMonkey) to assess individual impact. **70** responses (≥ **50%**).
Focus groups & discussions	Focus groups and discussions with around **160** relevant stakeholders during the mission, in order to identify evidence on societal impact (at least one example per project).
Report writing	Data from documents, interviews and focus groups have been triangulated. Interpretation has been made by the evaluators.

A detailed agenda of activities can be found in annex 4.2. Mission programme.

1.3.4. Limitations of the evaluation

The evaluation was executed as planned. There were only a few limitations in the evaluation:

1. The **number of mission days** was limited. As a consequence, the number of interviews and focus groups was carefully planned. The most important consequence is that external stakeholders could not be interviewed at a large scale. This could be important to identify the impact on society and to identify potential opportunities of developmental impact in the second phase. In order to minimise this issue, case studies have been produced targeting the impact at societal leve specificallyl.
2. Not all details of the **self-assessment reports** could be double-checked. In particular on the KRA`s, we were not able to find hard data to confirm the reported results. In general terms, we did not find any indication that the reported KRAs were not correct.
3. This evaluation also concerned the **second phase of the project**. However most of the documents (self-assessment reports, etc.) were focused in the first phase and little information was available about the planning of the second phase. As a consequence, most of our conclusions and recommendations are linked with the available information.
4. The Theory of Change (ToC) of VLIR-UOS has been developed after the formulation process of the programme. As a consequence, the **logical frameworks of the programme do not match perfectly with the ToC**. According to ToC, outcomes are identified as specific objectives and can be considered as 'use of outputs': They imply changes in performance, behaviour, etc. At impact level, the main change envisaged is always a developmental objective (long-term). Implicitly, it is also about contributing to a changed role of the local partner as an actor of change (medium-term). In many cases the formulated specific objectives in the logframe are the sum of the intermediate results and are not describing the objectives at outcome level. It has been challenging for the evaluation team to take into account the logframes and the ToC at the same time. In most of the effectiveness paragraphs, we followed the logframes (as ToC did not exist during programme formulation), which often resulted in a summary of the intermediate results. Outcome level has been described in the impact level paragraphs. The impact level (developmental impact) has been limited as this evaluation is a mid-term evaluation and real impact can be expected during the second phase. That is the main reason why often the potential (developmental and institutional) impact of the programme and projects has been described.

1.4.5. Transversal themes

The evaluators have decided to assess the transversal themes jointly for the programme and project level, based on the consistency and uniformity that those topics have in the Cuban Higher Education system.

Gender. Research oriented from the perspective of gender approaches has become a model of analysis incorporated transversally into the study of Cuban reality, with the need to implement social actions, where universities as a promoter of education contribute to strengthening the project. The Cuban government has put into practice the National Plan of Action to follow up on the Beijing Conference, since 1999. This plan has contributed effectively and increasingly to promote government policies of support and promotion of gender equality in Cuba. In this sense, the Constitution of the Republic of Cuba establishes in Chapter VI the insertion of women in development on equal terms and opportunities with men, enjoying equal economic, political, cultural, social and family rights. Specifically at UO (Chair of Gender), with regards the curricular side, the optional course 'gender and society' has been implemented (a postgraduate course called 'Mainstreaming the gender approach in university processes'), and similarly carried out socialisation workshops and scientific events linked to the theme of gender with impact on university extension in different scenarios of the society of Santiago (health institutions, schools, etc.), and the university community in general. We may conclude that at the IUC programme the participation of women is high and balanced.

Environment. There are several national strategies and policies related with Environment, and most of them are centralised in the National Climate Change Programme, coordinated by the Ministry of Science, Technology and Environment (CITMA). Also since 2007, the National Institute of Hydraulic Resources has implemented adaptive measures included in this programme to protect the availability of water resources (National Programme for the Protection of Terrestrial Waters). Another relevant policy is the Life Task (Tarea Vida): the governmental Plan for the Confrontation of Climate Change in the Republic of Cuba (also coordinated by CITMA). Specifically, in the higher education sector there is an Environmental Strategy, coordinated by the Directorate of Science and Technology of the MES. And at UO, there is also an Environmental Strategy, coordinated by the Environmental Research Line and the Centre for Multidisciplinary Studies of Coastal Zones (CEMZOC). Thus, evaluators consider Environment a priority issue at all levels, including within the IUC programme.

D4D. MES has a strategic planning 2017-2021 of the Information, Communication and Computerisation process. It includes the priorities of Computerisation for Higher Education in Cuba, ranging from the improvement of connectivity in all centres, to the computerisation of university processes. In the case of the UO, there is a computerisation programme that constitutes a strategy from 2018 to 2021, covering five general and three transversal lines. The general lines are: 1. Continuous improvement of the data network and telephone infrastructure; 2. Improvement in systems administration; 3. Strengthening of the academic web; 4. Development of technological resources for higher education; 5. Computerisation of university management. There are also three Transversal Lines: 1. Drafting of use policies and procedures manuals; 2. Staff preparation and training; 3. Development of computer security. This active policy shows that this topic is also a priority for the Cuban government, which is also spread at all levels, including the IUC programme/projects.

Following this analysis evaluators decided to score the transversal themes for all projects and programme level as "**Good**".

1.4. Structure of the evaluation report

The evaluation report is subdivided into two chapters. In the introduction chapter, the background, objectives, subject and methodology are described. In the subsequent paragraphs, a short description of Universidad de Oriente and the IUC is presented. In the second chapter the results at programme level and project level (eight projects) are presented. Considering the fact that the analysis at programme and project level mainly focus on the analysis of the impact at organisational level, two specific points have been added to complement the evaluation covering the individual and the societal impact.

1.5. Short Description of the Partner and IUC programme

1.5.1. The Partner: UO

UO meets almost all criteria required by VLIR-UOS for a broad multi-project IUC programme. It is one of the longest established and most complete universities in Cuba. It is located in the city of Santiago de Cuba (the country's second most important city), in the Eastern region. The university has a clear strategy for the development and management of science and innovation, with a functional structure of all the strategic areas headed by the Vice Rector of Research and Postgraduate Studies. These policies, strategies also demonstrated a clear awareness of the potential of working across academic structures on multidisciplinary research themes and in cross-disciplinary research teams.

The UO has a range of research/study centres of great scientific and technological relevance that offer opportunities of cooperation in various scientific fields. Among the most significant are: Centro de Estudios de Educación Superior (CEES) [Quality of Higher Education], Grupo de Energías Renovables Aplicadas (GERA) [Renewable Energies], Centro de Biofísica Médica (CBM) [Bioengineering and Biomedicine], Centro Nacional de Electromagnetismo Aplicado (CNEA) [Applied Sciences to Industry, Medicine, Biotechnology, Agriculture and Environment], Centro de Estudios de Biotecnología Industrial (CEBI) [Environment, Industrial Biotechnology and Biopharmaceutical Products], Centro de Estudios de Neu-rociencias, Procesamiento de Imágenes y Señales (CENPIS) [Biomedical Research and Bioengi-neering], Centro de Estudios de Eficiencia Energética (CEEFE) [Clean and Efficient Energy], Centro de Estudios Turísticos (CETUR) [Socio-cultural and Tourism Development], Centro de Estudios Multidisciplinarios de Zonas Costeras (CEMZOC) [Environment and Coastal Zone Management], Centro de Estudios para el Desarrollo Integral de la Cultura (CEDIC) [Local Development] and Centro de Estudios Cuba - Caribe (CECUCA) [Socio-Cultural Development and Regional Integration].

The university participates actively in several national scientific networks, especially those in which the institution has significant capacity, such as: biotechnology, energy, environment, food production, medical equipment and technology, business management, integrated water management, and integrated coastal zone management. UO also seems to have good level of collaboration with enterprises, industries and the provincial government in the Eastern Region for the implementation of actions in the field of innovation and technology transfer.

UO is one of the most active Cuban universities in the field of international cooperation, and is a member of several international university associations, such as Unión de Universidades de América Latina y el Caribe (UDUAL), Inter-American Organisation for Higher Education (OUI) and Ibero-American Association for University Postgraduate(AUIP) and implements various international projects

financed by CAPES (Brazil), AECID (Spain), COSUDE (Switzerland) and CIDA (Canada). The university has good connections with universities in Spain, Brazil, Mexico and Venezuela as well as the Caribbean region. However, the institution has not developed many contacts or any cooperative partnership with academics in Flemish institutions. Among the main constraints on international research cooperation with UO are the general lack and obsolescence of infrastructure and facilities for research and postgraduate activities and the absence of general support services to research.

1.5.2. The Programme

The IUC programme addresses themes of national and regional significance and focuses on research, innovation, education, and extension of the cooperation results from the university to all the eastern of Cuba, focusing on achieving better indicators related to sustainable development and academic performance. The focal areas of this programme and the specific projects are coherent with the national priorities of Cuba and those of VLIR-UOS' country strategy. Project 1 deals with food security, sustainable agriculture production, environment and climate impact mitigation. Project 2 focuses on public health services and technologies. Project 3 strengthens capacities in biotechnological research from natural products. Project 4 focuses on the challenges related to social and cultural local development and heritage preservation. Project 5 copes with the development of new (renewable) energy sources, biofuels and clean technologies. Finally, the efforts in terms of institutional capacity building focus on institutional ICT policy (infrastructure, high performance computing, library information services, user platforms), academic English capacity development and installation of a reference centre for English testing (CATFLAG) in the Eastern Region of Cuba and also the strengthening of scientific policy (basic and natural sciences) including also the pooling of central lab infrastructure and attention for research and technology transfer and intellectual property rights, etc. The programme is also supported by a Programme Support Unit which is put down as project (9) of this IUC programme.

The overall objective of the programme has been formulated as follows: To achieve a significant impact in the Eastern region considering national and local priorities in the context of sustainable development; To improve the university performance in terms of research, innovation and teaching, its overall institutional support structures and the cooperation with Eastern Cuban universities.

In the table below, we present the specific objectives of each project:

Project	Specific Objective
Project 1 (P1) Environmental scientific services for the development of sustainable agriculture and to face the climatic change in the East of Cuba	To improve scientific and academic development and performance supporting the agricultural development in order to face the bioclimatic stress; Extension strategies supporting an integrated management and decision-making structure to guarantee the agricultural development in the Eastern region are put in place.
Project 2 (P2) Research and applications in biomedical images and signal processing	Strengthening the research & development at UO in biomedical technology; Promoting the application of the Universidad de Oriente manufactered Medical technology in the Eastern region of Cuba, considering we need to reduce costs, improving the technical assistant and to support the technological development of the country.
Project 3 (P3) Biopharmaceutical products from natural sources to biotechnological development	Increasing innovative research and stimulating academic capacity on biopharmaceutical products from natural sources; Identifying innovative bioactive lead compounds or extracts in the Eastern region of Cuba.
Project 4 (P4) The social sciences and the humanities facing the challenge of social and cultural local development: the enhancement of heritage preservation	Improved capacity at UO in terms of interdisciplinary approaches to face the challenges of local development in Santiago de Cuba; Raised awareness regarding patrimony conservation and local development challenges in Santiago de Cuba.
Project 5 (P5) Energy, biofuels and clean technologies for sustainable development	The scientific and academic capacity at UO in the area of energy, biofuels and clean technologies to face the challenges of sustainable development in Eastern Cuba is improved; Incorporation of obtained research results in the area of renewable fuels and clean technologies for societal benefit in the Eastern region of Cuba.
Project 6 (TP1) Information and Communication Technology Infrastructure	Students and academics enjoy reliable central ICT services through a well-maintained and robust infrastructure.
Project 7 (TP2) Improvement of the Basic and Natural Sciences in the Universidad de Oriente	The infrastructure to develop the basic sciences in areas with tradition for the innovation improved and is used efficiently. The link between basic and applied sciences have been promoted and increased. The human resources in basic sciences and transfer of technology have been improved.
Project 8 (TP3) Strengthening Foreign Languages Skills for Science and Technology	To increase proficiency levels in foreign languages among university faculty, administrative staff, and students at UO (and by extension at universities across Eastern Cuba) to a level that is adequate for academic purposes, particularly in international collaboration.

2 Evaluation

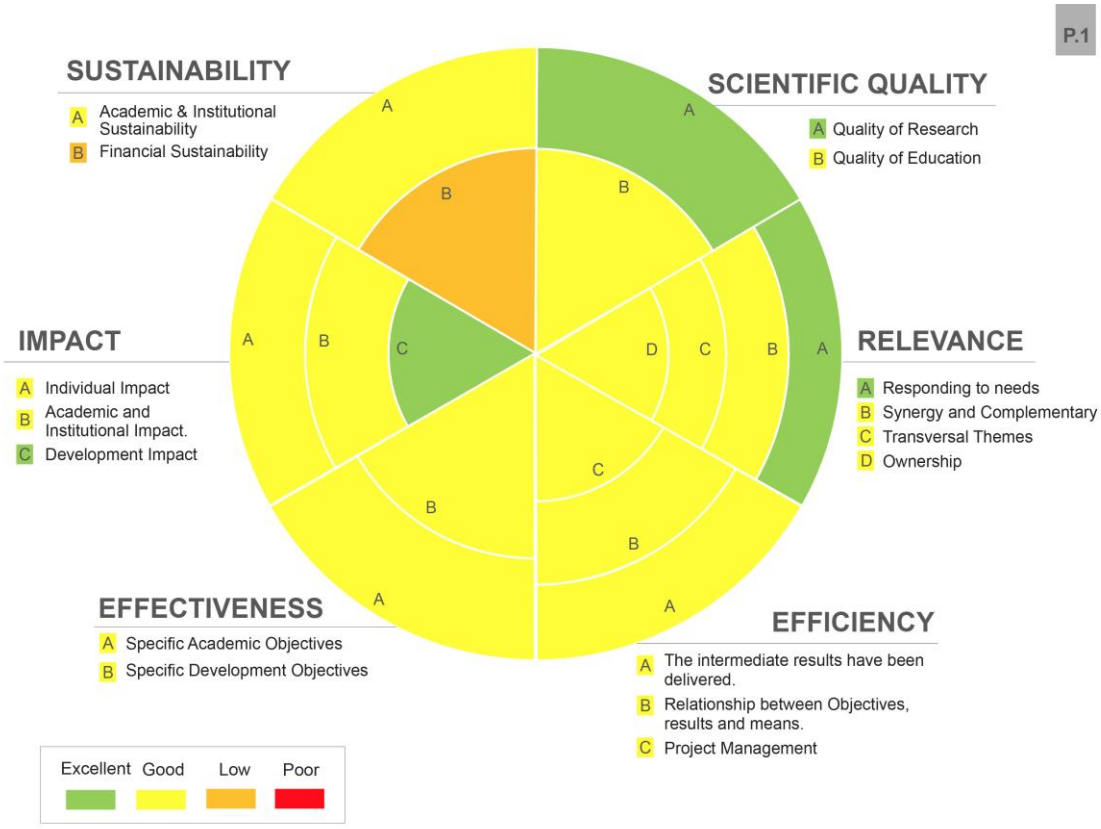
2.1. Evaluation per project

2.1.1 P.1 Environmental scientific services for the development of a sustainable agriculture and to face climate change in the East of Cuba

Universidad de Oriente historically developed important actions in the fields of Environmental and Agricultural Sciences, with awards at different levels for their social and/ or environmental impact. This included Master and PhD Programmes in which the staff is involved as well as the development of successful international projects with an interdisciplinary approach. There were also several interesting experiences in different fields: gronomy, veterinary, biology and chemistry engineering. However, there is a limited experience in TT and a limited contribution to the agricultural development. This was the background of the project.

Considering this background, P1 focused on the following objectives: 1) Improving scientific and academic development and performance supporting the agricultural development in order to face the bioclimatic stress. 2) Putting into place extension strategies supporting an integrated management and decision-making structure to guarantee the agricultural development in the Eastern regions.

Graphic summary of the evaluation



SCIENTIFIC QUALITY	
1.1. Quality of Research Score: **Excellent**	- The research produced by this project is cutting edge and fully relevant for the scientific environment of the oriental region, as water quality; magnetic field effects, plant - microorganism interaction system is one of the main priorities for the development of a sustainable agriculture and to face climate change in the East of Cuba. - The project has contributed to the publication of fourteen articles in international journals, one chapter and four of them are joint publications with the Flemish counterparts. Also four DNA bacterial sequences were registered at GENE BANK, and there are interesting prospects for more research outputs in the short/medium term. - Extension of scientific and academic services as consultancy to stakeholders and industries in the whole Eastern area of Cuba will increase incomes. - Have been involved in the publications, which shows a fluid relationship and continuous interaction. - The results of such interaction are incorporated in local and international journals, providing an excellent background for further collaborations. - Research outputs contribute to national strategies for climate impact mitigation, environmental protection and water resource preservation.
1.2. Quality of Education Score: **Good**	- The acquired equipment has contributed to raise the quality of pre and postgraduate teaching. - Integral approach of the contents gives the integral nature of the investigations. - The participation of other centres (BIOECO, CITMA, Institute of Hydraulic Resources, BIOFABRICA – Santiago de Cuba). - During phase I of the programme, six PhD theses, corresponded to the main research topics highlighted in the project (magnetic field effects, plant - microorganism interactions and the use of bio-indicators for the assessment of environmental contamination), have been carried out (4 joint). They significantly contributed to the achievement of the academic-specific objective. - PhDs execution generated outputs evidenced by academic and scientific improvement in supporting agricultural development under (climatic) stress conditions, e.g. WoS papers, presentation of works on national and international scientific events and conferences, MSc and grade theses associated to PhDs, as student research work and professional practices.

RELEVANCE	
P.2.1. Responding to needs Score: **Excellent**	- The project addresses two specific problems, [1] water resource preservation and the contribution to the decision-making processes by means of improvement of protocols for drinking water quality analysis and the use of bioindicators for determining contamination in freshwater ecosystems, as well as [2] safe biomass production by studying the effects of magnetic fields in irrigation water on immunomodulatory properties of medicinal plant species, plant growth regulation and IPM. - The outputs respond to the objectives of the national programmes for water resource preservation (rogramme for Confronting the Climate Change Impacts and the Programme for Terrestrial Water Protection and Preservation) as well as the 'Task Life' for confronting the effects of climate impact on coastal areas, also related to the National Programme for Sustainable Food Production and Food Security. - The uroject responds to University priorities (Environment research highlight). Results will be incorporated into the Environment strategy of the university. - The environmental scientific services lab is a reference centre for the regulatory entity for environmental studies (UMA) of CITMA in the territory.
P.2.2. Synergy and Complementary Score: **Good**	- Other sources of funding to support lab infrastructure and consumables could be projects sponsored by stakeholders and companies that need to be explored. - The project has clear complementarity with P3 (Biopharmaceutical products) in research disciplines such as molecular biology and microbiology, but also with research topics such as beneficial secondary plant metabolites to prevent diseases, with local and territorial impact. - Research cooperation with BIOECO focused on the use of aquatic fauna as bioindicators of freshwater resource contamination. BIOECO staff participate as teachers and students in the workshops organised by Tom Artois (Hasselt University). - Outputs from two PhD thesis defended in year four have been introduced in medicinal plants cultivation programme at BIOFABRICA, small farmers and urban agriculture programmes. - The project is well-embedded in the research highlight Integrated Management of Natural Resources for Environment Impact Mitigation, which supports the academic programme and research related to the objectives. - The Institute of Hydraulic Resources is a counterpart of a PhD thesis related to thedetection of cyanobacteria populations in drinking water reservoirs in the East of Cuba.
2.3. Transversal Themes (gender, environment and D4D) Score: **Good**	See 1.4.5

2.4. Ownership Score: **Good**	- BIOFABRICA – Santiago and BIOECO have demonstrated effective commitment, as they have been involved in workshops, teaching activities, PhD thesis experimental work (field level) and introduction of outputs. - Stakeholders have been beneficiated with human resource quality improvement (BIOECO) and economic incomes increase (BIOFABRICA and small farmers). The Institute of Hydraulic resource supported samplings at water reservoirs but introduction and publication of research results will need a signed agreement with a national regulatory entity.

EFFICIENCY	
3.1. The intermediate results have been delivered Score: **Good**	- The outputs respond to the objectives of the national programmes for water resource preservation (Programme for Confronting the Climate Change Impacts and the Programme for Terrestrial Water Protection and Preservation) as well as the 'Task Life' for confronting the effects of climate change on coastal areas, also related to the National Programme for Sustainable Food Production and Food Security. - The scientific services of the environmental laboratory, the visibility of VLIR-UOS within the university and the environment was increased. - The laboratory of environmental services has delivered services to Guantánamo saline factory, the plant for drugs production 'Laboratorios Farmacéuticos ORIENTE', environmental reserve 'Baconao Lake' and the plant for ice cream production, 'Siboney'. Also, the lab is in charge of services for water quality analysis supporting the technology transfer of magnetic-field treatment made by CNEA to industries and hotels in Santiago de Cuba, where magnetic devices are installed to improve the efficiency and quality of water consumption in washing machines, autoclaves and steam boilers.
3.2. Relationship between Objectives, results and means Score: **Good**	- There is an adequate interrelation between the objectives and the results, characterised by their integral character. - The means/inputs are justifiable and are carefully thought-out solutions for the defined outputs. - Outputs (intermediate results) contribute to the project objectives. - There are delays with consumer goods and reagents, it affected respond to demand of services. PhDs theses are a priority. - Cuba has only one company for exportation.

3.3. Project Management Score: **Good**	- Given the strengthening of the laboratory infrastructure, specialised technical scientific services are carried out, representing sources of income and contributing to the sustainability of the project (especially water analysis). - The management of resources has led to the participation of students from different specialties who actively participated with the members of the project. - Management manuals and procedures for equipment and techniques have been put into place in the lab. - Flemish partners check the project and visit the lab at least once per year.

EFFECTIVENESS	
4.1. Specific Academic Objectives Score: **Good**	- The PhD programme in Environmental Science is open to researchers from different faculties of the university and other institutions in the province. - Eleven students participated during phase I, nine from the Universidad de Oriente (Natural and Exact Sciences Faculty [1], Constructions Faculty [1], Chemical Engineering and Agronomy Faculty [4] and National Centre of Applied Electromagnetism [3]). Two other students belong to the stakeholders of the project (Seaport Administration Enterprise [1] and Flora & Fauna Company [1]). - Candidates from other educational institutions, research centres and companies from the Eastern provinces of Cuba should be included in the future. - One negative aspect for the selected joint PhDs is that they should write two final manuscripts, one in English and one in Spanish. - PhD students' formation should be more intensive, faculties should support much more PhDs students giving more time for research work, writing papers and manuscripts (PhDs students are professors and have other responsibilities in the university that compete with thesis execution).
4.2. Specific Development Objectives Score: **Good**	- Strengthening laboratory infrastructure - Human resources training and development - Development of scientific research and implementation of environmental services in the territory. - Expected outputs about water resource management were achieved on time, the ones related to food production have been postponed. The project was very ambitious in terms of objectives, topics and PhD students. - The quality of achieved outputs is excellent, supported by the PhD theses defended, peerreviewed publications, the introduction of results. - Objectives related tosafe biomass production and food production are

	still expected. - The project contributes tostrengthening networks between different areas (research centres and faculties) working environment topics with-in the university and with stakeholders.

IMPACT	
5.1. Individual Impact Score: **Good**	See 2.3.
5.2. Academic and Institutional Impact Score: **Good**	- PhDs students and postdocs trained in Belgium (trainings, scholarships and post doc research stays) include theoretical and practical learnings in research, teaching and students' professional practices. - Number of publications in peer reviewed and WoS publications in-creased - Number of MSc and PhDs thesis defended increased - Department policies for more intensive and in collaboration with PhDs formation change. - New collaborations of faculties of Natural Science, Constructions and Chemical Engineering as research centres of Industrial Biotechnology and CNEA with Belgian universities were open. Also, collaborations of external stakeholder BIOECO with Hasselt University.
5.3. Development Impact (Impact on Society) Score: **Excellent**	- The impact on the community is given in the fundamentals by scientific services that it offers and the active participation of the members in the organisation and development in environmental conferences, that con-tribute to environmental education. - The project outputs (results, PhD programme) have contributed tothe consolidation of environment research highlight of the University. - Two PhDs theses received the award to scientific merit of the University in the Balance of Research Activities (Jan, 2018). - Collaboration between the university and external stakeholders in-creased for the introduction of research outputs and joint academic ac-tivities (such as workshops, training courses).

SUSTAINABILITY	
6.1. Academic & Institutional Sustainability Score: **Good**	- The laboratory of environmental science is the main source of income, so it should be exploited for purposes of economic sustainability. At the moment, five services including the determination of seventeen parameters are implemented and there has been income but they have been too insufficient to be sustainable for now. - New departments of Education in Natural Sciences and Agronomy as new research groups in Biology, Hydraulic and Chemistry departments are interested in the project. They are preparing new project proposals for the next phase. - PhDs thesis outputs are introduced in BIOFABRICA, stakeholder BIOECO actively participated in the workshops, the Institute of Hydraulic Resources contributed with field sampling experiments at water reservoirs. - The environmental services lab is a reference centre for the regulatory entity (CITMA) at Santiago de Cuba. - New research groups including students are being created within the Biology and Hydraulic department. - Joint projects with BIOECO and the Institute of Hydraulic Resources should be done for the improvement of research and for the introduction of outputs. - Two external stakeholders were included as team members, professors of the university and joint PhD students. - A team project with Ecuador supported the project in the first three years. New collaboration with Brazil and other Southern countries is foreseen.
6.2. Financial Sustainability Score: **Low**	- Although there is a clear potential of getting resources providing services from the lab, neither business plan nor operational process has been implemented. - Structural limitations and weaknesses with regards to the new role of universities providing those kind of services may delay the future financial sustainability of the initiative.

Stakeholders/Beneficiaries Mapping

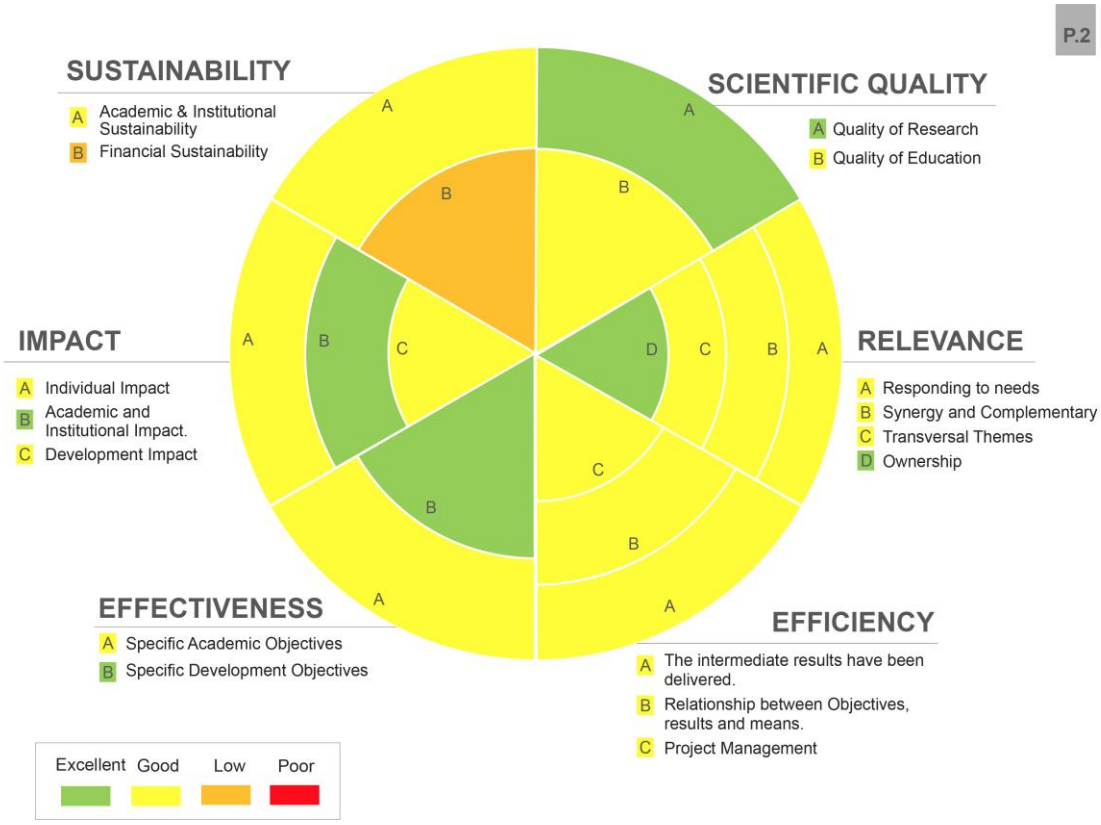
	LOCAL		REGIONAL / NATIONAL	
	Direct	Indirect	Direct	Indirect
INDIVIDUAL	6 PhD Students 2 Ms Students 17 Teaching Staff 2 Students coming from local stakeholders	UO Bachelor Students UO Mc Students UO PhD Students UO Teaching and Research Staff	Students and staff from other Higher Education Institutions in the Eastern of Cuba	Students and staff from the Cuban Higher Education System
ORGANISATIONAL	Faculty of Agricultural Sciences Natural and Exact Sciences Faculty Constructions Faculty Chemical Engineering and Agronomy Faculty National Centre of Applied Electromagnetism CNEA (UO) CEBI (UO)	Other Research Centres at UO	Other Higher Education Institutions in the Eastern of Cuba	Cuban Higher Education System
SOCIETAL	BIOFABRICA, BIOECO, Institute of Hydraulic Institute, CITMA Small Farmers Association	Factory of Pharmaceuticals Production (LFO), Drugstores and Pharmacies	National Institute for Hydraulic Resource, Basic Industry Ministry, Agriculture Ministry institutions at national level	CITMA (Water Quality Analysis programme, Climate Impact Mitigation Programme, “Life” Task) Ministry of Agriculture

2.1.2 P.2 Research and application in Biomedical images and signal processing

The participants in this project did not have any scientific or academic links. The project was based on the needs of UO in this field, which previously had some links with other donors (Government of Canada, University of New Brunswick). The starting point was a specific discipline (Biomedical Engineering), with outdated labs and limited research and a limited academic offer. Besides that, UO had already at that time a prominent role in this discipline in the Republic of Cuba.

The specific objectives of the project are: 1) Strengthening the research & development at UO in biomedical technology; 2)Promoting the application of the Universidad de Oriente manufactured Medical technology in the Eastern region of Cuba, considering we need to reduce costs, improve the level of the technical assistants and to support the technological development of the country.

Graphic Summary of the Evaluation



SCIENTIFIC QUALITY	
1.1. Quality of Research Score: **Excellent**	- The research produced by this project is cutting edge and fully relevant to the scientific environment of the country, such as the Public Health system as one of the main priorities in the country. - The project has contributed to the publication of twelve articles in international journals, and four of them are joint publications with the Flemish counterparts. Also, one patent has been registered, but there are interesting prospects for more research outputs on the short/medium term. - Stakeholders (hospitals, companies, etc.) have been involved in the publications, which shows a fluid relationship and continuous interaction. - The results of such interaction are incorporated in local and international journals, providing an excellent background for further collaboration.

1.2. Quality of Education Score: **Good**	- There has been a fruitful support to the Master studies on Biomedical Engineering in these first five years. Following this, the new PhD programme in this topic will be the only one in Cuba in this discipline, providing a distinctive sign of UO in the Cuban research ecosystem. - Thus, educational initiatives linked with this project are cutting edge at national and also at international level. This is confirmed by the fact that students from the Dominican Republic and Colombia have registered in different courses in the last two years. - Some graduates have also gotten additional fellowships from other donors (French and Chilean governments), confirming the strength of the activities.

RELEVANCE	
2.1. Responding to needs Score: **Good**	- The process of project formulation has always prioritised the needs identified by the Cuban partners. - Those needs, and the main objective (improving R&D in biomedical technology), are fully aligned with institutional and national policies. - Main stakeholders have been involved in the Context Analysis and followed, with some difficulties at the beginning, the LFM methodology, which has been finally accepted and adopted by the participants. - The project has been responsive to changes, as for instance with regards to new research lines which arose in the last three years, and that have been included progressively.
2.2. Synergy and Complementary Score: **Good**	- Synergies with other local projects are mainly with P5 and TP2, and have relevant impact for these initiatives too. - There is also a very relevant complementary work carried out with a Close the Gap project, which is extensively described in the case study. - Cooperation with other international actors has also been implemented, as for instance, the University of New Brunswick or the University of Bordeaux.
2.3. Transversal Themes (gender, environment and D4D) Score: **Good**	See 1.4.5

1.1. Ownership Score: **Excellent**	- The different stakeholders consulted showed full commitment tothe project, and they are interested in increasing the activities and extending the impact. - There is a clear development motivation in all participants, and the fact that the topic is so relevant at national level, facilitates the success of the initiative. - Some examples of the specific interest of the stakeholders are described in the case study.

EFFICIENCY	
3.1. The intermediate results have been delivered Score: **Good**	- KRAs and indicators are high and almost with no discrepancies with the initial targets. - Indicators could include in the future cooperation activities with other actors, considering the growing importance of such actions in the future of the project.
3.2. Relationship between Objectives, results and means Score: **Good**	- Means are justifiable and relevant with achieved outputs. The modernisation of labs play a major role in this area. - Those outputs (intermediate results) contribute decisively to the project objectives, especially to improving the level of technical assistants and the support of the technological development of the country. - Delays have been related to the difficulties of the procurement process and UO bureaucracy. PSU has contributed to speed up the processes and finally those issues did not affect the final results achieved by the project.
3.3. Project Management Score: **Good**	- Besides the abovementioned delays, management has been effective and communication has been good between all participants. - The Planning, monitoring and reporting systems contribute to the timely reporting and the joint actions with the other projects.

EFFECTIVENESS	
4.1. Specific Academic Objectives Score: **Good**	- Specific objectives have been fulfilled and the quality of outputs is satisfactory, with a clear remark to the new PhD programme on Biomedical Engineering. - Evidence about the impact of the project in the main stakeholders is remarkable. This impact is visible at individual level (research staff, students / increased capacity), organisationorganisational (university/increased research) and societal (hospital, enterprises/fruitful cooperation).
4.2. Specific Development Objectives Score: **Excellent**	- Both specific objectives have been fulfilled. - First objective (strengthen R&D in this field) has been materialised by 2 new labs, the specialised classroom, the support to the Master programme and the launch of the new PhD programme. As result six joint

	PhD projects finished (plus one local) during this period. - The second objective (application of the medical technology) has as main output the "Imagis" software, which is achieving a great use in hospitals of the eastern of Cuba. This output will facilitate the introduction of the results of the project in the clinical practice. Other medical technology outputs are expected to be ready for commercialisation in the short term.

IMPACT	
5.1. Individual Impact Score: **Good**	See 2.3
5.2. Academic and Institutional Impact Score: **Excellent**	- The added value of the project for the academic performance of OU it is outstanding. - PhD students and PhD holders (VLIR-UOS scholarships) are embedded in the departments, are implementing research, publishing in international journals and contributing to technology transfer activities which benefit the Cuban Public Wealth system. - The number of publications in international refereed journals has increased. - The number of PhD and MSc-holders as a result of the project has also increased. - Institutional changes are visible, as a result of the project
P.5.3. Development Impact (Impact on Society) Score: **Good**	- The abovementioned cooperation with the local Hospital has raised interest of the regional and national Public Health authorities. Thus, policy makers are at the moment supporting the initiative and actively contributing the widespread of the obtained results. - The activities developed for instance, with the hospitals, had impact at research and technological level, but also directly at the final user level. The new technology facilitates the diagnosis, the response-time and the quality of the service to the population. - It is clearly perceived the role of the university of development actor, which in this specific case seems to have promising perspectives.

SUSTAINABILITY	
6.1. Academic & Institutional Sustainability Score: **Good**	- Academic and institutional commitment of the education offered is confirmed by different sources (internal documents, priorities at national level, etc.). - The abovementioned collaboration schemes with other actors could have in the near future a solid background to produce long-lasting impact in relevant stakeholders. - Those activities are contributing to the social development of the municipality and the region itself. - Individual academics show impressive commitment to continue to work in these kind of activities.
6.2. Financial Sustainability Score: **Low**	- There are two main expected sources of getting additional funding, and contributing to the sustainability of this project. - The first one is the commercialisation of the technology developed with the VLIR-UOS support. This potential source will depend on the work and effectiveness of the TTO, together with the research excellence of participants. - The second one is the recruitment of international students which may support with their fees, the sustainability of the project. Without any commercialisation effort 32 international students (Dominican Republic, Colombia) registered in the course, which provide interesting prospects for the embryonic initiatives at UO to advertise and capture students in the coming academic course. - Both sources have an interesting potential, but there are structural limitations described in several parts of this report, that do not allow to guarantee the financial sustainability at short term.

Stakeholders/Beneficiaries Mapping – MISSING

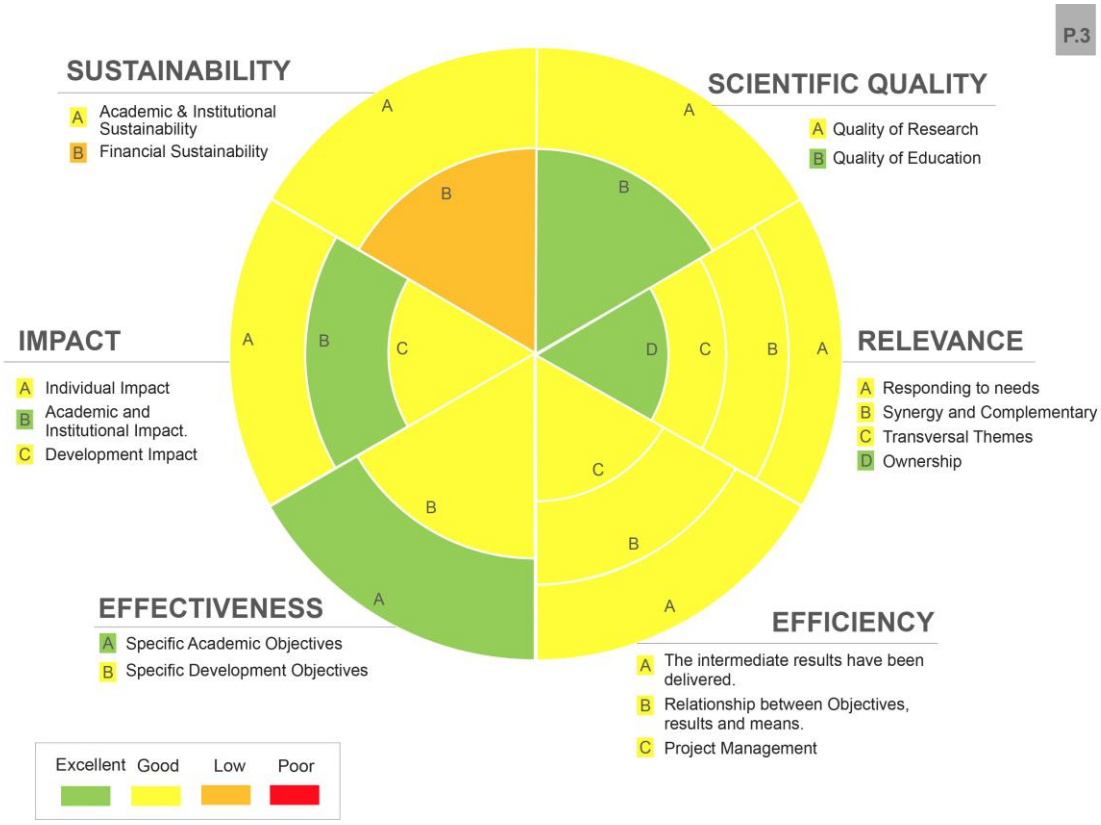
	LOCAL		REGIONAL / NATIONAL	
	Direct	Indirect	Direct	Indirect
INDIVIDUAL	PhD Students (8) MsC Students (3) Teaching Staff (11)	MSC students (7) Bachelor Students from Physics (48), Biomedical Engineering (158) and computer science (95) Mechanical Engineering (1) Chemistry (1) Chemistry Engineer (1) International bachelor students (32) International MSc student (1) International PhD students (2)		Around 112320 patients per year
ORGANISATIONORGANISATIONAL	UO			Centre of Genetic engineering and biotechnology (CIGB), Havana
SOCIETAL	Hospitals: • Juan Bruno Zayas • Saturnino Lora • Oncológico • Joaquín Castillo Duany Ambrosio Grillo	Other potential institutions of the health system	Hospitals: • Frank País, Havana • Vladimir Ilich Lenin, Holguín • Hospital General Moa, Holguín • Celia Sánchez, Granma • Ernesto Guevara, Las Tunas • Lucia Iñiguez, Holguín	

2.1.3 P.3 Biopharmaceutical products from natural sources to Biotechnological development

This project includes researchers from four areas of UO Natural Sciences Faculty; Pharmacy Department (6), Biology Department (3), Chemistry Department (2) and the Centre for Industrial Biotechnology Studies - CEBI - (7) having a common subject: Biopharmaceutical Natural products. This faculty has past experience with pharmaceutical community services, biotechnological research and the management and preservation of the Eastern Cuban biodiversity. They had also in the past joint scientific projects with Mexico, France, Spain, Italy, Brazil, and successful collaborations with AECID, IRD-Frances, CAPES and CNPQ in Brazil, Italo-Latinoamericano Institute and CONACYT in Mexico as well as with NGO as MEDICUBA/SUIZA.

The project proposed the following specific objectives: 1) Academic: To increase the innovative research and academic capacity on biopharmaceutical products from natural sources 2) Developmental: To identify innovative bioactive lead compounds or extracts in the Eastern region of Cuba.

Graphic Summary of the Evaluation



SCIENTIFIC QUALITY	
P.1.1. Quality of Research Score: **Good**	- Quality at research level is high, which is confirmed with 24 articles published in international peer reviewed journals (nine more than foreseen). There are also seven conference proceedings, two chapters in books and 64 conference contributions. - Moreover, stakeholders have been involved in some of these publications as researcher of TOXIMED, Medical University of Santiago de Cuba and LABEX. - Thus, we may say that research results have been successfully incorporated in national or international peer reviewed journals.
P.1.2. Quality of Education Score: **Excellent**	- Quality of the education is supported by the fact that the three bachelor programmes related with the project (Pharmacy, Biology and Chemistry) have received from the National Accreditation Board the category of Excellent. In addition, three Masters Programmes are linked to the project: Biotechnology, Pharmaceutical Services and Chemistry; the two first also with the category of Excellent. - Considering this background, four elective courses have been implemented and a PhD programme in Biotechnology and Drug Discovery has been submitted to the MES. This PhD programme, unique in the eastern provinces, includes researchers from eight national institutes and other five overseas, two of them from the Kingdom of Belgium.

RELEVANCE	
P.2.1. Responding to needs Score: **Good**	- The project was conceived targeting the needs of UO in this field. - In fact, the needs respond to 2 crucial research lines at institutional level at UO (UO Research documents). - The stakeholders were involved in the analysis phase, and had played a major role during the execution of the activities. Their involvement follows a win-win approach and consider the limitations of the Cuban context with regards university-industry cooperation. - No important changes have occurred until now, so the project also did not change its activities and expected results.
P.2.2. Synergy and Complementary Score: **Good**	- The project participated in the Funds of spin-off projects (six international projects). As consequence, new lab equipment with funds from MEDICUBA/SUIZA organisation was installed at UO, while the stakeholder TOXIMED built a lab of Molecular Biology sponsored by the Public Health Ministry. In addition, one Joint and one local PhD received funds for mobility to laboratories in France, as well as a third local PhD student do it in Brazil through CAPES funds. - Synergies with other local projects inside the programme are appropriately exploited. Together with P2 they had reach a high impact on health-related activities in Hospital Juan Bruno Zayas, while with P1 are sharing in both directions the lab facilities created by the programme. Also, is directly connected to TP2 enforcing the researchers in the chemistry field.

	- The P3 staff have running research activities with a VLIR-TEAM project host at CIDEM in Havana and are local co-promoters to another VLIR-TEAM project with Universidad de Camaguey.
P.2.3. Transversal Themes (gender, environment and D4D) Score: **Good**	See 1.4.5
P.2.4 Ownership Score: **Excellent**	- UO staff working in the project show fully commitment and enthusiasm with the outputs achieved during the project, and the promising perspectives. - Five major stakeholders have been also consulted during the evaluation: Centre of Medical Toxicology (TOXIMED), Biological Experimental Laboratories (LABEX), Universidad de Camaguey, General Hospital Santiago Juan Bruno Zayas, and Eastern Centre of Ecosystems and Biodiversity (BIOECO). - All of them emphasised their commitment and interest on continuing the cooperation activities in the framework of the project. - Some examples of the specific interest of the stakeholders are described in the case study.

EFFICIENCY	
P.3.1. The intermediate results have been delivered Score: **Good**	- KRA`s and indicators are very high, which in some cases could be explained because the potential of the Cuban participants was underestimated. - Indicators are SMART but, in the future, should be linked with activities in cooperation with external actors/stakeholders (enterprises, hospital, etc.).
P.3.2. Relationship between Objectives, results and means Score: **Good**	- Means could be considered justifiable and relevant, with regards achieved outputs. Labs modernisation has been crucial for the development of research and academic activities. - The seven expected intermediate results have contributed decisively to the project objectives. The weakest result has been the access to updated scientific information and the improvement of teaching materials, because structural issues (logistics, lack of space). - Labs installation had also delays which have affected some activities, but plans have been efficiently adapted to those external factors which did not depend on the staff working on the project (long procurement process, embargo situation, etc.). PSU also contributed to speed up the processes.

P.3.3. Project Management Score: **Good**	- The relation between PSU and P3 project leaders has been fruitful, providing feedback when necessary. The guidelines for good management were discussed and approved by the Joint Steering Committee, and was useful to establish transparent and effective procedures served as a way to have a correct and transparent procedures. - The management manual is well-developed and applied at project and project level.

EFFECTIVENESS	
P.4.1. Specific Academic Objectives Score: **Excellent**	- Effective changes are fully visible at academic level. Besides the increased human and technological capacity of the Bachelor, Master and PhD programmes, students and teaching staff have received numerous awards and recognition. - Two relevant scientific meetings were organised, with participation of important researchers from different countries, both achieving remarkable visibility. - As consequence, the indicators for the specific academic objective have been achieved, and discussion for future activities are now running.
P.4.2. Specific Development Objectives Score: **Good**	- The new laboratory facilities have been critical for evaluating the pharmacological/toxicological profiles of the plants used by Cuban population. Although labs are not fully operational yet, they are already contributing to international publications. - In the framework of the developmental objective “identify innovative bioactive lead compounds or extracts in the Eastern region of Cuba”, more than 2000 surveys were taken in four of the five Eastern Cuban provinces in order to evaluate the traditional use of the medicinal plants in this region. Results are promising for future activities in the framework of the project.

IMPACT	
P.5.1. Individual Impact Score: **Good**	See 2.3
P.5.2. Academic and Institutional Impact Score: **Excellent**	- Academic and institutional impact is preeminent; students and teaching/research staff that have participated in the project are fully integrated in the departments, implementing research, and publishing in international journals. - The number of publication in international refereed journals has increased from 4 (2011) to 24 (2018). - The number of PhD and MSc-holders as a direct result of the project has increased twelve persons, while other 22 received benefices in an indirect way. The main part of them from the declare stakeholders.
P.5.3. Development	- Activities contributed decisively to achieve the development objective

Impact (Impact on Society) Score: **Good**	(identifying innovative bioactive lead compounds or extracts in the Eastern region of Cuba). The results of the survey allowed the evaluation of the traditional use of the medicinal plants in this region, creating an inventory of 196 plant used in more than 52 health affections. The parts of the plant used, the preparation mode, the administration way and other aspects were also recorded. Respondents that refers the use of toxic/poisons plants were informed of the risks, suggesting the use of other species. At the same time, local medical authorities were informed. - All this information was considered to choose the plants in which will be focus the main effort, considering three essential aspects: 1) information available (chemical composition, previous pharmacological reports etc.), 2) Health problem to solve and 3) Availability of the plant.

SUSTAINABILITY	
P.6.1. Academic & Institutional Sustainability Score: **Good**	- Individual academics show remarkable commitment to continue to work in these kinds of activities. - The new courses have achieved academic and institutional commitment, which is confirmed via different sources (UO strategy, priorities at national level, etc.). - Research staff has also good potential of capturing funds from other scientific international calls (Horizon 2020, etc.). - Collaboration schemes with other actors are already institutionalised and could be increased with other actors in the country.
P.6.2. Financial Sustainability Score: **Low**	- Although there is a potential for getting funds from international research competitive calls, pharmaceutical research usually requires great funding. - Collaboration schemes with other actors may help to sustain the research activities but additional sources of funding should be explored.

Stakeholders and Beneficiaries Mapping

	LOCAL		REGIONAL / NATIONAL	
	Direct	Indirect	Direct	Indirect
INDIVIDUAL	PhD Students (7) MsC Students (11) Teaching Staff (12)	UO Bachelor Students UO Mc Students UO PhD Students UO Teaching and Research Staff	PhD Students (1) MsC Students (1) Students and staff from other Higher Education Institutions in the Eastern of Cuba	Students and staff from the Cuban Higher Education System
ORGANISATIONAL	Natural Sciences Faculty Pharmacy Department Biology Department Chemistry Department CEBI	Other Research Centres at UO	Other Higher Education Institutions in the Eastern of Cuba, and, specifically: Medical University of Santiago de Cuba Universidad de Gran-	Cuban Higher Education System Pedro Kouri Institute

			ma Universidad Camagüey	
SOCIETAL	TOXIMED Biological Experimental Laboratories (LABEX) General Hospital Santiago, Juan Bruno Zayas BIOECO Inhabitants interviewed and informed about the correct use of Medicinal Plants at the municipalities of: Santiago de Cuba (637), Palma Soriano (505), Songo la Maya (410)	Eastern Pharmaceutical Laboratories (LFO) Communities were the opinion poll and interventions were done	Inhabitants interviewed and informed about the correct use of Medicinal Plants at the municipalities of: Bayamo, Granma (117) San German, Holguín (161) Mayarí, Holguín (305) Jesús Menéndez, Las Tunas (199) Holguin, Holguín (200)	Communities were the opinion poll and interventions were done

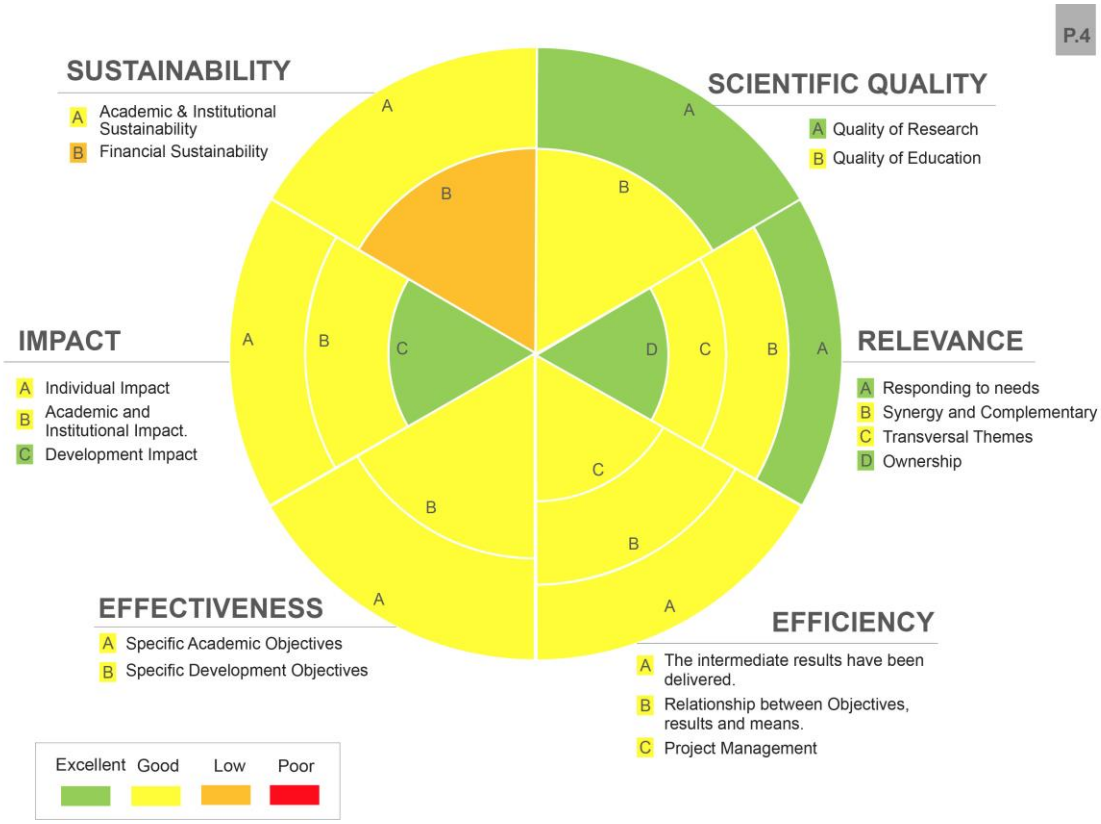
2.1.4 P.4 The Social Sciences, the Humanities and Architecture facing the challenges of local development in Santiago de Cuba and the Eastern region of Cuba. The enhancement of heritage preservation

The project has as background some interesting initiatives funded by international donors in the field of Architecture and Heritage (AECID, VLIR-UOS/North-South-South). As result of these projects a modern lab was set up in the Department of Architecture at UO, and different articles were published in international journals.

However, the current project had a clear interdisciplinary approach from the beginning, and had a long maturation process in 4 Faculties (Social Science, Humanity, Architecture and Low). The Cuban team, together with the Flemish universities, identified several stakeholders and potential beneficiaries of the action (see Stakeholders and Beneficiaries Mapping)

The Specific Objectives of the project are: 1) To improve capacity at UO in terms of interdisciplinary approaches to face the challenges of local development in Santiago de Cuba; 2) To raise awareness regarding heritage conservation and local development challenges in Santiago de Cuba.

Graphic Summary of the Evaluation



SCIENTIFIC QUALITY	
P.1.1. Quality of Research Score: **Good**	- The project contributed to the publication of 48 articles in international journals (2 in Group I, 22 in Group II, 17 in group II and 7 in Group IV). The scientific quality of the articles is certified by the fact that all these articles have been published in peer reviewed international journals. - However, there are two weaknesses in this area are related with the fact that: 1) only three are joint articles with the Flemish partners; 2) no stakeholders have participated in those articles.
P.1.2. Quality of Education Score: **Excellent**	- The project contributed extensively to improve the quality of the education by developing an interdisciplinary doctoral programme on Cultural Heritage for Sustainable Development (waiting the approval from the MES at the moment), three Master's degree accredited with the certification with excellence and one with the international Award for AUIP of seven degrees. - The impact of the education in alumni is clearly perceived by the fact that, for instance, most of the students in the Master are coming from non-educational institutions in the region. After the completion of the Master some of them were promoted in those institutions any example or evidence to support this is the current Dean of the Social Science Faculty (promoted). - Another evidence of the quality of the education is the fact that 3 stu-

	dents get international fellowships (WIPO, Coimbra, and ELAP, in topics related with the project). - The project has a regional and national impact because the fact that it is the first PhD programme in this topic in Cuba, having the participation of teaching staff from different Cuban universities (Universidad de la Habana, CUJAE.).

RELEVANCE	
P.2.1. Responding to needs Score: **Excellent**	- The project was formulated jointly by the Cuban team (4 faculties) and the Flemish partners (University of Antwerp and University of Louvain). - The project had an impressive support from the main stakeholders in this topic, both at the municipality and regional level (see stakeholders table). - As consequence, the project objectives are fully aligned with the needs of the main stakeholders, and are channelled via the improvement of the capacity at UO in terms of interdisciplinary approaches to face the challenges of local development in Santiago de Cuba. - The project is responsive to changes in local priorities because the conceptualization and its development depend on the active participation of the stakeholders. The integration of the pedagogical and sport universities at UO have also produced the integration of researchers of these universities in the project.
P.2.2. Synergy and Complementary Score: **Good**	- The project has no synergies with current activities of other international donors (but it had in the past, see background). - Main synergies came via North-South-South initiatives, or CAPES-MES projects. - In the other hand it has very active links with other UO IU projects as P8 (Foreign languages) and TP6 (ICT). - There are some good examples of cooperation with TP1, with Masters' students developing Apps linked with the Santiago de Cuba Heritage.
P.2.3. Transversal Themes (gender, environment and D4D) Score: **Good**	See 1.4.5
1.2. Ownership Score: **Excellent**	- Ownership in this project is very high, at institutional level and also in the municipality. - Stakeholders show substantial support and ownership in the initiative, as they perceive it as crucial for their interests (archive, schools, municipality, etc.).

EFFICIENCY	
P.3.1. The intermediate results have been delivered Score: **Good**	- KRA's attainment is so high, that in some cases there is a feeling of lack of ambition at the moment of establishing the indicators (from the Belgian side, as Cuban proposed their current and usual indicators requested by MES, for instance, with regards the publication in international journals). - The only missing indicator are PhD theses which have not been delivered yet, but this issue will be solved in the next months as they are at the final stage.
P.3.2. Relationship between Objectives, results and means Score: **Good**	- Means/inputs are fully justifiable in the project, which has one of the lowest budgets in the UO initiative. - Outputs clearly contribute to the project objectives. - Delays did not affect substantially to the work plan and have been solved with the support of both sides. - One major revision was done at the beginning of the project, and the measures and actions planned there have contributed to the success of the project. - Ratio cost (lower cost)/benefit very positive
P.3.3. Project Management Score: **Good**	- The 4 Work Subprojects Commissions (one from each Faculty) have worked smoothly with the local coordinator. No problems have been identified with regards the management of the project, besides the usual bureaucracy issues of the Cuban context. - Reporting system worked efficiently

EFFECTIVENESS	
P.4.1. Specific Academic Objectives Score: **Good**	- There is a clear contribution from the intermediate results in the achievement of the specific objective: 1) Academic staff with scientific degree has increased; 2) Interdisciplinary doctoral programme; 3) Interdisciplinary courses included in the Master programme in Caribbean studies; 4) Social work programme for the implementation of research and teaching in relation to particular heritage and social problems. - Changes at institutional level are related with the interdisciplinary approach of the PhD programme. - Changes in behaviour are also confirmed based on the current cooperation atmosphere between the 4 faculties.
P.4.2. Specific Development Objectives Score: **Good**	- Evidence of changes in policy at institutional level are clear, as for instance, the new Department about UO (Archivos). - Evidence of changes in organisationorganisational capacity are related with the new courses and new subjects introduced at UO: 2 New subject in the Master Programmes, 2 New Master Programmes, the PhD programme, and the introduction of "Research Results" in the subjects of Pre- and Post-graduate degree of the 4 university Faculties.

IMPACT

P.5.1. Individual Impact Score: **Good**	See 2.3

P.5.2. Academic and Institutional Impact
 	
Score: **Good**
	- The main academic and institutional impact of this project are focused on the establishment of new courses, the promotion of the interdisciplinary approach, and the active cooperation with relevant actors of the municipality.
	- Besides that, the following issues contributed to the academic impact of the project:
	  - New facilities and improvement of the conditions for doing research (1 Lab in each Faculty).
	  - Articles published in international journals (48)
	  - New Courses and training programmes developed (51)
	  - New joint PhD staff for UO (5 and 2 Local PhD)
	- This impact will clearly improve the academic performance of the university, which will be visible at short/medium term.

P.5.3. Development Impact (Impact on Society)
 	
Score: **Excellent**
	- This project contributed to envisage the role of the university as development actor in the field of Heritage Contribution at the Municipality of Santiago. Main examples of that are:
	  - The activities developed with Primary Schools at 2 neighbourhoods, which provided an excellent platform for raising awareness on the importance of Heritage to a significant number of students (2038).
	  - The activities carried out in cooperation with Historic Archive of the city, which also allowed to increase the visibility and use of the repositories by researchers and users.
	  - The project contributed to show the role of the university as development actor in the field of Heritage. It is significant the contribution to the Municipality of Santiago from Cuba for the activities developed with Delegates of the Government of 2 neighbourhoods, which provided an excellent platform for raising awareness on the importance of Heritage for the People. In this respect they have been benefitted as users indirect 35500 people of both neighbourhoods.

SUSTAINABILITY	
P.6.1. Academic & Institutional Sustainability Score: **Good**	- The academic sustainability of the different initiatives is supported by an obvious institutional commitment. - The activities developed with local stakeholders have a clear support that may foresee a sustainability in the future, via joint projects, additional funding, etc. - As this project is basically investing in capacity building/human resources, the trained staff will continue to work and impact in the institution.
P.6.2. Financial Sustainability Score: **Low**	- The project, based on its impact on the municipality, has good chances to attract other sources of funding, besides those related with R&D. - However, at the moment no additional sources of funding are expected at short/medium term.

Table with Stakeholders & Beneficiaries.

	LOCAL		REGIONAL / NATIONAL	
	Direct	Indirect	Direct	Indirect
INDIVIDUAL	PhD Students (7) MsC Students (36) Teaching Staff (48) U.O. Student (2010) Students from Clodomira Acosta Scull 530 Students from Nacho Marti Scull:410 -Students from Roberto Rodriguez scull: 1156	UO Bachelor Students UO Mc Students UO PhD Students UO Teaching and Research Staff	Students and staff from other Higher Education Institutions in the Eastern of Cuba	Students and staff from the Cuban Higher Education System
ORGANISATIONORGANISATIONAL	UO Social Sciences Faculty UO Humanities Faculty UO Law Faculty UO Department of Architecture UO Department of Philosophy	Other Research Centres at UO	Other Higher Education Institutions in the Eastern of Cuba	Cuban Higher Education System
SOCIETAL	Dirección Provincial MINED Dirección Municipal MINED Escuelas Primarias: Nacho Martí. (435) Clodomira Acosta (602) Roberto Rodríguez (1221) Consejo Popular Distrito José Martí (15) Consejo Popular Vista Alegre (12) Archivo Provincial Santiago de Cuba(25) Archivo Museo Emilio Bacardí (46) Dirección Provincial Patrimonio Santiago de Cuba (56) -Oficina del Conservador de la ciudad Santiago de Cuba (197)	Consejo Popular Distrito José Martí (21000). Consejo Popular Vista Alegre (14500) Dirección Provincial Patrimonio (56)	Fiscalía y Tribunales Provincial - Santiago de Cuba, Holguín, Granma, Guantánamo, Las Tunas, Ciego de Ávila. Oficina del Historiador Universidad de la Habana.	Eastern of the Republic of Cuba Municipalities

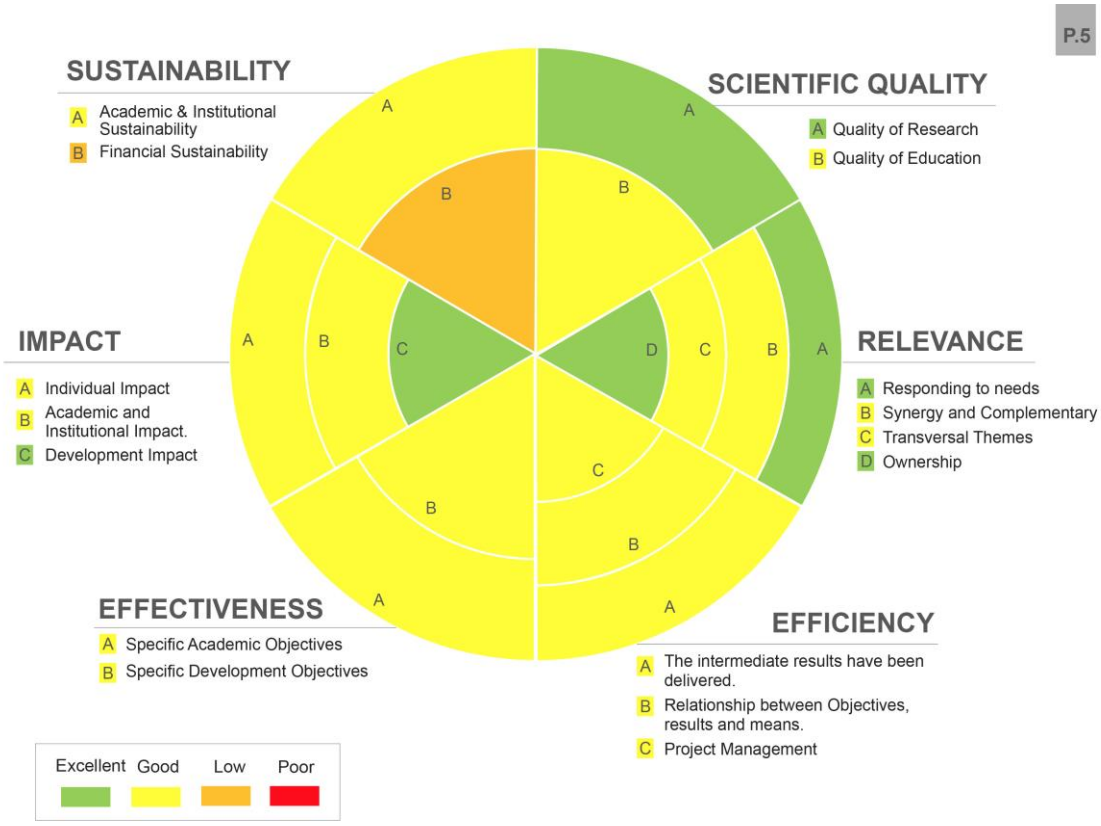
2.1.5 P5. Energy, biofuels and clean technologies for sustainable development

This project includes researchers from different Faculties at UO (Chemical Engineering, Mechanical Engineering, Sciences, Mathematics and ICT),having the following common subjects: Energy, Biofuels and clean technologies for sustainable development. UO has an extensive tradition and reputation in Cuba in the field of energy. Different awards at national level were achieved, even before the cooperation with VLIR-UOS started. The Master programme in Energy Efficiency has been running for eight editions.

From the Flemish part, participants are located in Hasselt University, KU Leuven and Ghent University.

This project proposed the following specific objectives: 1) Academic: The scientific and academic capacity at UO in the area of energy, biofuels and clean technologies to face the challenges of sustainable development in Eastern Cuba is improved; 2) Developmental: Incorporation of obtained research results in the area of renewable fuels and clean technologies for societal benefice in the Eastern region of Cuba.

Graphic Summary of the Evaluation



SCIENTIFIC QUALITY	
P.1.1. Quality of Research Score: **Excellent**	- Some of the research lines of this group are cutting edge, provoking the incorporation of the results to international refereed journals (6). - Those publications usually involve the stakeholders mentioned above, following a clear "applied research" model. - The evolution in the publications area is very promising, considering the success in different topics in the last 2 years.

P.1.2. Quality of Education Score: **Good**	- The project did increase the number of disciplines at Bachelor level and improved both Master and PhD programmes. - Stakeholders are also involved in the education offer provided in the framework of this project as part of the students are coming from the enterprises/stakeholders. Thus, alumni later on apply the knowledge acquired in the industry. - Participants have also benefitted from fellowships of other donors (Erasmus+/EU and University of Hasselt fellowships).

RELEVANCE	
P.2.1. Responding to needs Score: **Excellent**	- The process of project formulation had an active participation from both sides (North and South). - The topics of the project (energy, clean technologies, sustainable development) have demonstrated links with the policy documents (2030 policies at national level). - The project involved several stakeholders from the region (enterprises, producers' organisations, etc.). Those are actors producing biomass (e.g. Sugar industry) or using regeneration of activated Carbon (rum factories, Nickel industry, medical care, etc.). - UO approached them with fruitful partnership approach, fully relevant for this context. - The initiative has been responsive with regards changes in the local priorities, which have come directly from identified stakeholders.
P.2.2. Synergy and Complementary Score: **Good**	- The project has exploited synergies with other international initiatives: RENet project (EU funding/Edulink), CAPES-MES project and CYTED project. - Also, at national level there has been funding from MES and also funding from the same institution using the Chinese credit facility. - Funding with the rest of the local projects if clear. These are interactions with the following projects: P1, P2, TP1, TP2 and TP3.
P.2.3. Transversal Themes (gender, environment and D4D)	See 1.4.5

Score: **Good**	

P.2.4 Ownership Score: **Excellent**	- Stakeholders consulted demonstrated clear commitment with the project activities. The Rum factory has established strong links with the researchers of the project. - Other stakeholders are frequently consulted to discuss new projects. The amount of collaboration activities has increased constantly during the last 2-3 years. - This is the case because stakeholders perceived the benefits of the applied research carry out in the framework of the project, so there are several running agreements and more collaborations in the pipeline.

EFFICIENCY	
P.3.1. The intermediate results have been delivered Score: **Good**	- UO has adapted the indicators of the project taking into account the development of the activities and different variables, with the objective of assuring the achievement of the objectives. - Thus, Indicators have been consistent with regards these changes, and the values on the output-indicators have been appropriate.
P.3.2. Relationship between Objectives, results and means Score: **Good**	- Means/inputs are justifiable and are carefully thought-out solution for the defined outputs. In fact, in this project is clear that the priority has been to prioritise equipment purchase with regards funding research mobilities. - At the end, this strategy has contributed to the outputs of the project, as research publications were not possible without equipment.
P.3.3. Project Management Score: **Good**	- Relationship between PSU and P5 project leaders has been fruitful. Guidelines for good management have been discussed and approved by the Joint Steering Committee, and transparent and effective procedures were established. - The project seems to be adequately monitored by local and Flemish partners, considering also the achievement of the different outputs.

EFFECTIVENESS	
P.4.1. Specific Academic Objectives Score: **Good**	- The project has the expected progress with regards the academic objective; the scientific and academic capacity at UO in the area of energy, biofuels and clean technologies to face the challenges of sustainable development in Easter Cuba is improved. - Quality of the academic outputs is acceptable, but remarkable in the case of the research outputs. Some articles published in international peer reviewed journal are exploring new and promising applications of technology developed in the framework of the project.

P.4.2. Specific Development Objectives Score: **Good**	- The expected progress with regards the development objective (incorporation of obtained research results in the area of renewable fuels and clean technologies for societal benefice in the eastern region of Cuba), in terms of outputs, are properly achieved. - Quality of the outputs is satisfactory and relevant with regards expectations from the stakeholders (see example below in the case study).

IMPACT	
P.5.1. Individual Impact Score: **Good**	See 2.3
P.5.2. Academic and Institutional Impact Score: **Good**	- One of the main outstanding impacts in the academic performance of UO has been the promotion of the interdisciplinary approach, which in this field was quite limited. This a clear change in behaviour at faculty level that is having additional impact in other areas. - The increased number of publications in international refereed journals is also an interesting achievement. - Collaboration has sparked between the referred departments but also to other research centres.
P.5.3. Development Impact (Impact on Society) Score: **Excellent**	- Research has raised interest of several actors of the industry (see stakeholders/beneficiaries). - Collaboration activities developed stakeholders will clearly contribute to the economic and social development (see case study below). - As consequence, the role of the university as a development actor and engine of innovation is certainly perceived. New collaborations will follow, according with the contacts established with the industry during the evaluation process.

SUSTAINABILITY	
P.6.1. Academic & Institutional Sustainability Score: **Good**	- Researchers show commitment to continue working in these kinds of activities. They have good potential of capturing funds from scientific international calls (Horizon 2020, etc.), and the UO policy with regards scientific fundraising should support this process. - Collaboration schemes with stakeholders are already institutionalised and could be increased with other actors at regional or national level.

P.6.2. Financial Sustainability Score: **Low**	- Ability to attract external funds from local stakeholders is confirmed, but need more support from TTO. Some of the actors (Nickel or Rum factory) have enough resources to fund those kinds of activities in the coming months. - Other sources of finance could be international scientific competitive calls and recruitment of international students.

Table with Stakeholders & Beneficiaries

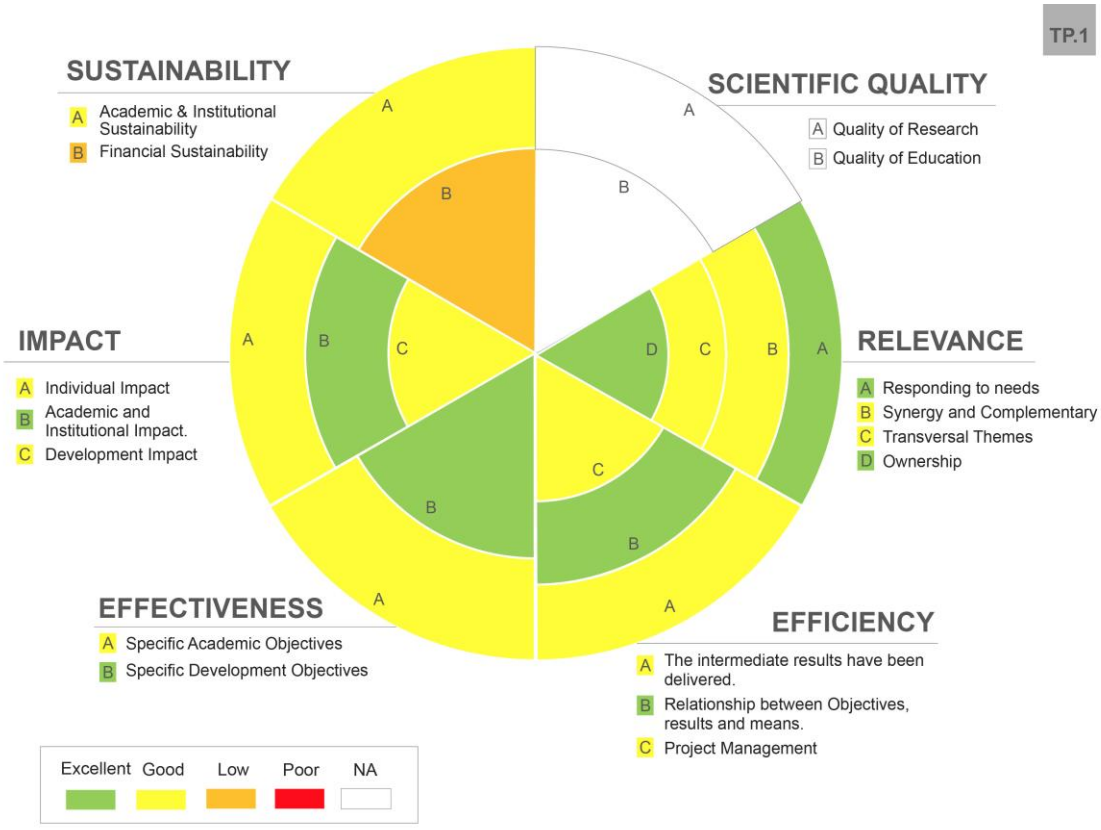
	LOCAL		REGIONAL / NATIONAL	
	Direct	Indirect	Direct	Indirect
INDIVIDUAL	PhD Students (9) MsC Students (7) Teaching Staff (16) Students from AZCUBA (1) Electromedical (1)	UO Bachelor Students UO Mc Students UO PhD Students UO Teaching and Research Staff	Students and staff from other Higher Education Institutions in the Eastern of Cuba	Students and staff from the Cuban Higher Education System
ORGANISATIONAL	UO Chemical Engineering Faculty UO Mechanical Engineering Faculty UO Sciences Faculty UO Mathematics and ICT Faculty	Other Research Centres at UO	Other Higher Education Institutions in the Eastern of Cuba, specifically University of Camagüey	Cuban Higher Education System
SOCIETAL	AZCUBA CUBARON ELECTROMEDICAL	Beverage enterprise Agroindustry enterprise Rural Communities located in Guama (150 people)	ISMM – Moa Carbon Activado de Baracoa (Provari) Emprea de Nickel Pedro Soto Alba	Community of Moa

2.1.6 TP1. Information and Communications Technology infrastructure

The UO ICT institutional department started the current collaboration with the Flemish universities after some relevant international experiences. UO participated in the main ICT projects in the region, acquiring great experience in dealing with international donors and improving its cooperation schemes with relevant local actors.

This project proposed the following specific objective: to increase efficiency of all activities in UO through operational ICT services, supported with sufficient human capacity and robust technical infrastructure.

Graphic Summary of the Evaluation



SCIENTIFIC QUALITY	
P.1.1. Quality of Research Score: **NA**	NA
P.1.2. Quality of Education Score: **NA**	NA

RELEVANCE	
P.2.1. Responding to needs Score: **Excellent**	- The project was formulated in a collaborative manner, considering the critical needs in this area of UO, and the relevant expertise of Belgian universities in ICT. - The project fully fits with the local policy to increase internet connectivity and improve the ICT infrastructure for scholars. - The fact that UO had previous experience in international projects in this field clearly facilitated the match-making process. - UO had several changes that affected the initial idea, being the most of important the universities integration process. The project was responsive to these changes.
P.2.2. Synergy and Complementary Score: **Good**	- The project has a transversal approach, so synergies have taken place with all the rest of the projects. - The ICT department submitted 2 projects to other VLIR-UOS calls (ICT Infrastructure Project Call 2014 and the Close-The-Gap Call 2014), and one of them was successfully accepted. They also assisted P5 in the preparation of a Close-The-Gap Call (2016) to provide the Eastern Region's hospitals with infrastructure for sharing medical imagery, this call was successful.
P.2.3. Transversal Themes (gender, environment and D4D) Score: **Good**	See 1.4.5
2.1. Ownership Score: **Excellent**	- The university contributed and supported the ICT modernisation by building and furnishing several spaces (e.g. Datacentre), plus the purchase of other needed equipment as an electronic generator or telephonic tools. - UO has taken full ownership of the project, as all the deliverables and developments accomplished are deployed directly in the Campus, and there is huge interest and commitment on continuing offering these services.

EFFICIENCY	
P.3.1. The intermediate results have been delivered Score: **Good**	- Results of this project have been focused on improving physical infrastructure, user infrastructure for training and information services, development of application for administrative processes and capacity building of staff. - All targets have been accomplished in the referred period.
P.3.2. Relationship between Objectives, results and means Score: **Excellent**	- The project operated at very low cost, compared with high results achieved. The main reason for that has been the substantial donations from Ghent University, Vrije Universiteit Brussel and HAN University (The Netherlands). - The means/inputs are fully justifiable - Delays have been related with the long procurement process and the difficulties in the effective arrival of equipment, but did not affect the delivering of the expected outputs.
P.3.3. Project Management Score: **Good**	- Management of the project was efficient. The planning of activities, monitoring tasks and reporting were appropriately distributed, contributing to the success of the project. - Good cooperation both with the PSU (UO) and with the participant Flemish universities.

EFFECTIVENESS	
P.4.1. Specific Academic Objectives Score: **Good**	- Although there were not specific academic in this project, Three students get their MSc. in the framework of the project, and nine PhD students are carrying their research in UCLV, in synergy with the other project.

P.4.2. Specific Development Objectives
 	
Score: **Excellent**
	- All expected outputs have been properly achieved, with high quality and direct impact on stakeholders.
	- Evaluator found evidence of the impact of this project in:
	  - UO ICT policy (e.g. internal rules promoting and regulating internet access).
	  - UO organisationorganisational capacity with regards skills and structures in this area (changes in the structure and new services created).
	- The indicators for the specific development objective have been achieved.

IMPACT	
P.5.1. Individual Impact Score: **Good**	See 2.3
P.5.2. Academic and Institutional Impact Score: **Excellent**	- Impact at institutional level are relevant (see 4.2) and had a direct influence in the academic and research performance of researchers.

P.5.3. Development Impact (Impact on Society) Score: **Good**	- The project has raised interest of other stakeholders, mainly governmental enterprises, who have contacted the project leader with specific interest in several services. Most of those services are in the field of training or consultancy. - There are some examples of activities developed with local stakeholders, contributing to the economic and social development (see the most relevant example in the case study below). - The project contributed to increase the visibility of the university as a development actor. The government establish a protocol providing UO a key role in the communications of the country in case of hurricane or similar disaster.

SUSTAINABILITY	
P.6.1. Academic & Institutional Sustainability Score: **Good**	- ICT development is a national and institutional priority. The inputs of the project contribute to the academic and institutional sustainability of the project. - The activities developed with local stakeholders contribute to the economic and social development, and have relevant previous initiatives which supported the extension of the collaboration with the current project. - Staff from the ICT department showed their full commitment with the initiative, and the evaluators have found evidence in this direction.

P.6.2. Financial Sustainability
 	
Score: **Low**
	- ICT equipment for universities is expensive and is affected by obsolescence.
	- However, the evaluators could have confirmed that the ICT department has planned several activities for the next period with the aim of being self-sustainable. Those activities are related with:
	  ○ HPC services for enterprises
	  ○ Training courses for several actors
	  ○ New applications and consultancy
	- The success of these activities will depend also in the new developments of the TTO and the commercialisation policy.

Table with Stakeholders & Beneficiaries

	LOCAL		REGIONAL / NATIONAL	
	Direct	Indirect	Direct	Indirect
INDIVIDUAL	IT Staff at UO (31) Students (18554) Researches and academics (2997) Administrative staff (1117)	Other individuals cooperating with UO for academic or research activities	Students and staff from other Higher Education Institutions in the Eastern of Cuba	Students and staff from the Cuban Higher Education System
ORGANISATIONAL	VLIR-UOS projects at UO UO community	UO administrative units UO Faculties UO Departments UO research units	Other Higher Education Institutions in the Eastern of Cuba, specifically ISMM (50) UG(50)	Cuban Higher Education System, specifically UDG (2) CUG (2) UHO (2) ULT (2) UCLV (10) Camagüey (1) Cujae (2) MES (3) ISMM (4)
SOCIETAL	Joven Club de Computación (8)	Children and young people of Santiago de Cuba (120 000)	Other potential stakeholders at regional or national level	

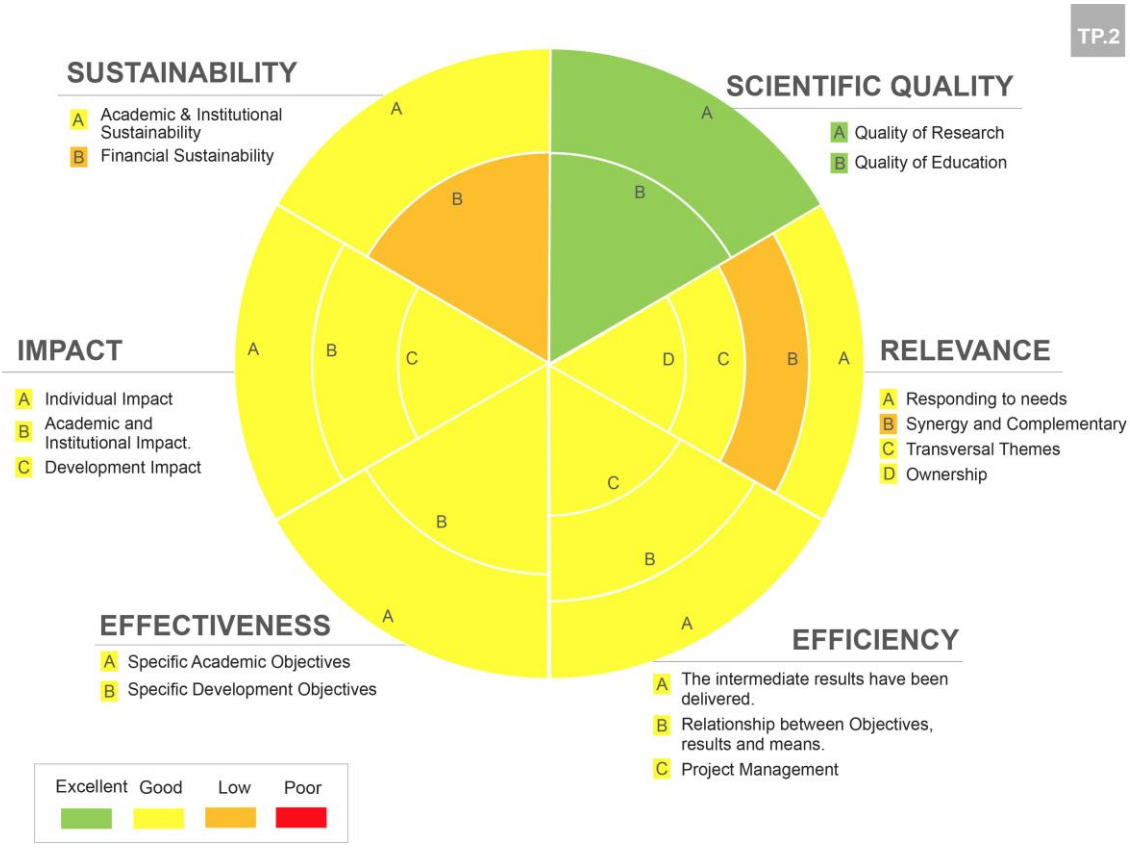
2.1.7 TP2. Improvement of Basic and Natural Sciences in the Universidad de Oriente

The Departments of Physics and Chemistry in the Universidad de Oriente (UO) played a decisive role in the research results of this institution in the last years. Two of the most important research centres in the UO: the Centre of Biophysical and Medical Research and the Centre of Biotechnological Research (CBM and CEBI respectively: Centro de Biofísica Médica and Centro de Biotecnología Industrial), came into being as a natural result of the development of those departments approximately twenty years ago. The strong basic science was at the origin of more applied research work activities. However the infrastructure for the research activities in those areas was really primitive, and there was a crucial need to set up a TTO and support commercialisation of research and academic activities.

The objectives proposed in this project were: 1. The infrastructure to develop the basic sciences in areas with tradition for the innovation improved and is used efficiently. 2. The link between basic and

applied sciences have been promoted and increased. 3. The human resources in basic sciences and transfer of technology have been improved.

Graphic Summary of the Evaluation



SCIENTIFIC QUALITY	
P.1.1. Quality of Research Score: **Excellent**	- 30 articles have been published in international journals, being nine joint publications with Flemish counterparts during the five years of the project. - High scientific quality considering the journals that have published those works. - Mainly academic stakeholders have been involved. PhD students are working in articles where enterprises will be involved but there are no results yet. Nevertheless, in the Cuban context, it is difficult to combine high impact publications in basic sciences with enterprises interests due to the obsolescence of the industry.
P.1.2. Quality of Education	- New education practices have been adopted as consequence of the VLIR-UOS support via new postgraduate courses (7), optative subjects (3) and workshops (8). Besides that, a new PhD Programme has been launched in Basic Science, expected to be approved in the coming

Score: **Excellent**	months (already submitted to the MES). - The impact of the education in alumni could be perceived in the improved training and capacity to publish in international journals. Seven PhD Master's and Bachelor's students published 26 papers during the five years of the project. Missing data from Online survey - Regional/international integration of education practices. The new PhD programme has a regional approach, participating teaching staff from 5 HEIs, which clearly has a very relevant added value for the Eastern region of Cuba. The programme will benefit the knowledge acquired during the programme and also the labs, which are crucial for the PhD process.

RELEVANCE	
P.2.1. Responding to needs Score: **Good**	- Although the initial idea came from the Cuban side, after a needs analysis, the formulation of the project was implemented in a participative manner with the Flemish partners. - The VLIR programme and in particular TP2 have had a positive influence in the reduction of the main research subjects at UO, from 70 to 12. As consequence, interdisciplinary has been promoted and new organisationorganisational and structural conditions are in process. - This project is an example of a response to the changes and reorganisation of the research lines at UO. - The project also reorganised the way of the postgraduate education in the Eastern region of Cuban with the elaboration of a new PhD programme in Basic Sciences.
P.2.2. Synergy and Complementary Score: **Low**	- There are some examples of Synergy/complementary issues with other projects funded by other donors. Increased cooperation with Brazil via CAPES projects (3 projects). Two PhD students who will defend their research in 2018 (Manuel Hernández Wolpez and Alexey Cruz García) obtained samples and their microstructural characterisation at the Universidade de Sao Paulo supported by a CAPES-MES Project 104. Similarly, some techniques in Barkhausen noise were developed in collaboration with the same University by means of FAPESP and CNPQ projects. The published articles in collaboration have increased the links with that University and those agencies. - However links and synergies of TP2 with other projects, which should be crucial considering its transversal approach, are not evident. - The recently established TTO has contacted all the faculties and started to play a role in the dissemination of the research to enterprises.
P.2.3. Transversal Themes (gender, environment and D4D)	See 1.4.5

Score: **Good**	
P.2.4. Ownership Score: **Good**	- Ownership is high, and local stakeholders (at the university) are very interested in the development of the project, especially after its influence in the reduction of research lines.

EFFICIENCY	
P.3.1. The intermediate results have been delivered Score: **Good**	- KRA's attainment is high - Main difficulties to achieve the indicators did not depend on the participants but on bureaucracy at academic (delay on the PhD agreement between UO and KU Leuven) or logistic level (slow process to set up the new facilities). - One of the indicators has not been accomplished (training of UO professors in Belgian labs) because of the reorientation to increase the number of PhD students benefitting from the initiative.
P.3.2. Relationship between Objectives, results and means Score: **Good**	- Means and inputs are justifiable according with the achieved outputs. The project is cost-efficient and provides clear evidence of impact at different levels. - Delays have been justified and respond to structural issues - Changes in the work plan have been justified and respond to new needs identified by the beneficiaries.

P.3.3. Project Management Score: **Good**	- Management manual has been applied and provided a good cooperation framework between participants. - Some members of the management team (2) left the institution but the project did not suffer specific problems because a smart handover was organised. - The reporting system and the relationship with the PSU worked smoothly and contributed to the achievements of the project.

EFFECTIVENESS	
P.4.1. Specific Academic Objectives Score: **Good**	- The 3 main objectives have been achieved: 1) The infrastructure for the basic Sciences has been improved; 2) The links between the basic and applied sciences have been increased as a result of the integration of research activities at UO (although this could not be attributed directly to the project); 3) The financial and organisationorganisational support of the Technology Transfer Office and its contribution to the research activity at UO. - Changes in behaviour could be also identified because of the promotion of the project of applied research and the interdisciplinary approach, although the direct intervention of the project in this is difficult to be assessed at this level. - Changes in organisationorganisational capacity in this project has been focused in the new services and policies promoted by the TTO.
P.4.2. Specific Development Objectives Score: **Good**	- The set-up of the TTO provides evidence of changes in the UO institutional policies, as the approval of a new IPR strategy, developed with the cooperation of the Cuban National Patent Office. - The TTO also shows evidence of changes in organisationorganisational capacity. The main example is the organisation of 5 Workshops with local actors, involving stakeholders from different relevant sectors (health, agriculture, etc.).

IMPACT	
P.5.1. Individual Impact Score: **Good**	See 2.3

P.5.2. Academic and Institutional Impact
 	
Score: **Good**
	- The main academic and institutional impact of this project is focused on the impact on research policies (integration of research lines & creation of the TTO). This issue affected all the departments at the UO.
	- Besides those main outputs, the following issues contributed to the academic impact of the project:
	  - New facilities and improvement of the conditions for doing research (3 Labs).
	  - Articles published in international journals (30)

	- New Courses and training programmes developed (10) - New PhD staff for UO (5) - This impact will clearly improve the academic performance of the university, which will be visible at short/medium term.
P.5.3. Development Impact (Impact on Society) Score: **Good**	- The initial steps of the TTO and the growing role of the university as development actor could provide greater impact in the near future. - There are several examples of societal impact. Below it is presented briefly one of them.

SUSTAINABILITY	
P.6.1. Academic & Institutional Sustainability Score: **Good**	- Main sources of sustainability are based on: 1) fundraising skills of staff to attract research funding; 2) TTO performance to attract funding from enterprises. - Both are at initial stage

P.6.2. Financial Sustainability
 	
Score: **Low**
	- Financial viability of future actions and incorporation of costs depend on structural changes, which are the moment seem not to be foreseen at short term.
	- However, the three new labs and the improvement of human resources constituting a potential capacity to obtain financial support by means of scientific services to enterprises of the Eastern region of Cuba. As examples we mention:
	  - a) Application of the Barkhausen noise technique in ACINOX Las Tunas. There is an intention letter already.
	  - Chemical analysis by using HPLC, Chromatograph and determination of fusion point with Geominera Enterprise from Santiago de Cuba.
	  - Environmental studies in other enterprises of the Eastern region of Cuba.
	- In addition, considering the low level in Basic Science in the Caribbean area the doctoral programme in basic sciences could be exported to Universities from other countries in the area. Three students from Dominican Republic are already participating. This country has special interest in improving the staff of the universities.

Table with Stakeholders & Beneficiaries

	LOCAL		REGIONAL / NATIONAL	
	Direct	Indirect	Direct	Indirect
INDIVIDUAL	PhD Students (4) MsC Students (2) Teaching Staff UO (10) Bachelor students (19) High School teachers (7)* **Postgraduate Students (~400)	UO Bachelor Students UO Mc Students UO PhD Students UO Teaching and Research Staff	Students and staff from other Higher Education Institutions in the Eastern of Cuba	Students and staff from the Cuban Higher Education System
ORGANISATIONAL	UO, Instituto preuniversitario Cuqui Bush*,	UO, Instituto preuniversitario Cuqui Bush* Other Research Centres at UO	Other Higher Education Institutions in the Eastern of Cuba, specifically University of Camagüey and IMMS – Moa and Havana University	Cuban Higher Education System
SOCIETAL	Ministry of Agriculture, Ministry of Health, Chamber of Commerce, Enterprises from Santiago de Cuba	Other local and regional stakeholders	Empresa AXINOC Las Tunas	Eastern region population

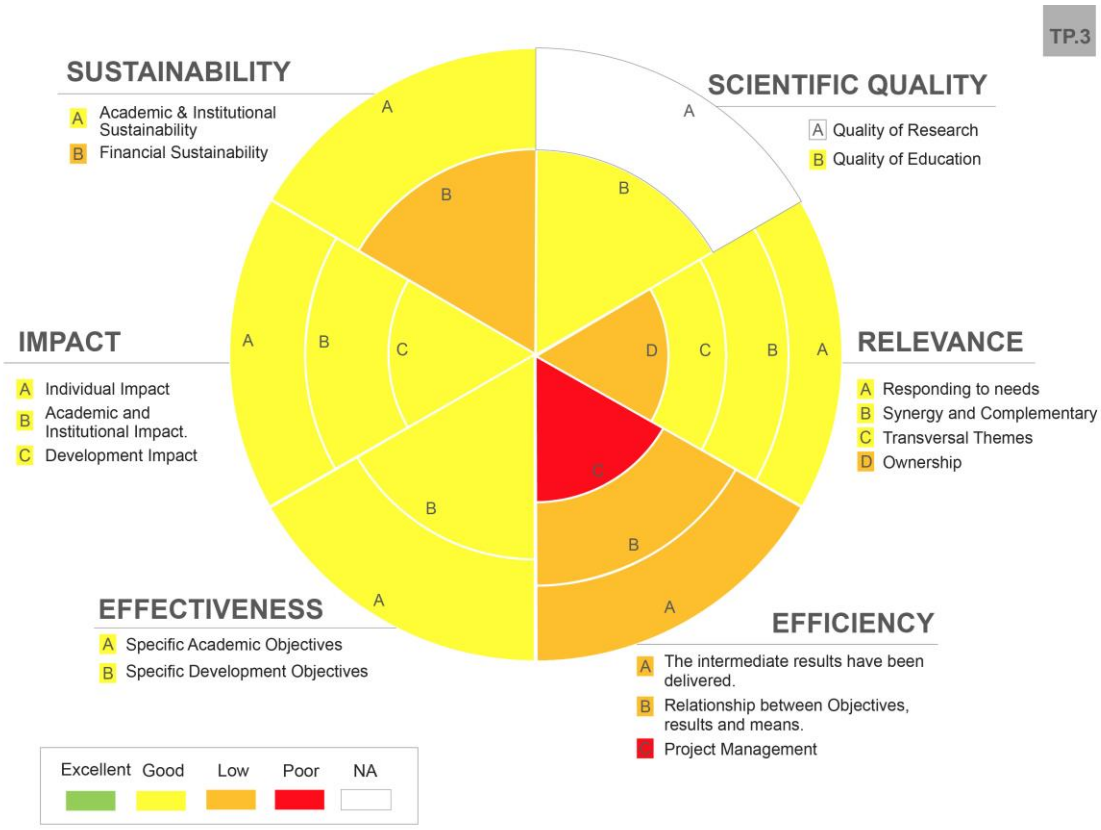
2.1.8 TP3. Strengthening Foreign Language Skills for Science and Technology

The original idea of this project was to implement of a centre in which young researchers have the possibility of strengthening a broader range of linguistic skills, which may have a tremendous impact on the quality of their research, enabling them to share opinions and materials with other scholars from different parts of the world. The project had an autonomous didactic approach in an integrated and interdisciplinary way, for which the creation of a Self-Access Resource Centre, something new at UO and the Santiago de Cuba environment, was necessary.

The objectives proposed in this project were: 1) PhD students are able to present and defend their PhD in English in domains of Science and Technology, thanks to the training mediated by and offered by TP3, both in oral and in written communication and cooperate internationally. 2) A Centre for Advanced Training on Foreign Languages (CATFLAg) is created in which autonomy in learning, e-

learning and innovative and digital means are used to supply courses tailored to the functional and communicative needs of PhD-students and VLIR UOS staff. 3) Certifications are issued for proficiency in English, in line with current requirements for admission at Flemish universities and in order to optimise studies abroad. 4) PhD students and researchers from different higher institutions of Santiago de Cuba and neighboring provinces will benefit.

Graphic Summary of the Evaluation



SCIENTIFIC QUALITY	
P.1.1. Quality of Research Score: **NA**	NA
P.1.2. Quality of Education Score: **Good**	- CATFLAg is providing support and training to the UO participants in the project. This support includes establishing the different language level profiles, personalised training by profile, support in writing academic/scientific articles, support when doing academic presentations in English, etc. - TP3 Members have been able to raise their professional levels; most of them upgraded to a Master level and there is also one joint PhD student.

RELEVANCE	
P.2.1. Responding to needs Score: **Good**	- The project formulation started at UO after understanding the needs of participants in the project. Drafting of activities had a collaborative approach, taking advantage of the wide experience of the Belgian side; - The idea of improving English proficiency of scholars has direct links with not only UO policy but also transversal policies from MES; - The project tried to be responsive to changes in the local priorities and development context, although some structural limitations influenced the final results.
P.2.2. Synergy and Complementary Score: **Good**	- As transversal project, the philosophy of the project is to create synergies and complementarity between the different actions, providing horizontal support to all projects. - Main synergies identified with external initiatives were with the MAGICC project (EU funding/languages evaluation) and a specific cooperation with the University of Alberta (Canada)
P.2.3. Transversal Themes (gender, environment and D4D) Score: **Good**	See 1.4.5
P.2.4. Ownership Score: **Low**	- Local stakeholders did not show effective commitment during part of the project execution (CATFLAg was closed for about one year). - Lack of communication and different approaches (North-South) with regards the scope of the project did not contribute to improving the ownership process.

EFFICIENCY	
P.3.1. The intermediate results have been delivered Score: **Low**	- Intermediate results have been accomplished - However, indicators are not SMART, and it is surprising the fact, for instance, that no quality control was put in place. Feedback from users is not collected, and there are no statistics about other services provided (support in writing articles, etc.).
P.3.2. Relationship between Objectives, results and means Score: **Low**	- The means/inputs could be justifiable because of the importance of this transversal project to the rest of the subprojects. - However, delays (CATFLAg) have been important and clearly affected the results and impact of the initiative. - No revisions of planning seem to be implemented, and more an adaptation of the changes to the context approach.
P.3.3. Project Management Score: **Poor**	- Although there are several management procedures established, project management from the Cuban side has not been able to deliver as expected. - A mix of lack of leadership and limited institutional support from the Cuban side, and possible different North-South expectations with regards the scope of the project, provoked several conflicts during the life of the project.

EFFECTIVENESS	
P.4.1. Specific Academic Objectives Score: **Good**	- One of the main results of the project is the fact that local researchers and teachers have gained confidence in their own possibilities. E.g. for testing, UO is collaborating with UCI, in Havana. Also for online oral performance, certification is sought from ITACE, a testing organisation in Flanders. With UCLV, cooperation has been started for e-learning exchange. With the U. of Cienfuegos, joint research is set up (see joint PhD). - There is evidence that the project has supported the implementation or development or change of partners' policy/actions, starting by its contribution to the creation of a Foreign Language Faculty. - CATFLAg is not ready yet to issue certifications for proficiency in English but there is some progress also in this direction.
P.4.2. Specific Development Objectives Score: **Good**	- CATFLAg may have a prominent role not only in supporting local researchers and by issuing certifications in English proficiency, but also providing English courses to other key actors of the region (enterprises, governmental bodies, etc.). - At the moment, the main interaction outside UO are with the Faculty of Medical Sciences and the Military university, which have produced relevant impact in both cases (see case study for details).

IMPACT	

P.5.1. Individual Impact
 	
Score: **Good**
	- This project has changed a lot within the minds of the young teachers and the young professionals who want to be trained for delivering their research in a professional way and interacting in a global world.
	- There is also impact in some senior researchers who have constantly increased their English level since the beginning of the project.
	- Main examples of these are:
	  - The PhD workshop organised in November 2017 with all content and presentations in English;
	  - The final evaluation meeting organised by the evaluators on 27/01/2018, where each project leader had to present their conclusions in English. This was an exercise proposed by the evaluators in order to success the English communication skills, which was successful.

P.5.2. Academic and Institutional Impact Score: **Good**	- The leaders of the different projects, both from Cuba and Flanders, actively support and approve of the approach and development of the TP3 programme. A mindset for interdisciplinary learning, for innovation and for teaching and conducting research in English has been created, but it has to further grow in order to be effective on the long term and also have its impact on the new faculty of foreign language learning. - Besides that, a networking has been established, not only within Cuba but also overseas, with different professional organisations and individuals.
P.5.3. Development Impact (Impact on Society) Score: **Good**	- As this project has a transversal approach, main focus of the activities has been at institutional level. - Impact on society could be assessed with the activities carried out with the Faculty of Medical Sciences and the Military university (see case study). - The role of the university as a development actor may be increased in the next phase.

SUSTAINABILITY	
P.6.1. Academic & Institutional Sustainability Score: **Good**	- Academic sustainability of CATFLAg is assured by its institutionalisation in the recently created Faculty of Foreign Languages. - Its future role as main actor for providing/issuing certifications for proficiency in English will provide stability. The Dean of the Faculty is working in this direction and there is a clear institutional commitment by UO.
P.6.2. Financial Sustainability Score: **Low**	- Financial sustainability of CATFLAg is not assured at the moment as there are no active sources of funding. - However, the centre has an interesting potential to capture funds by providing English actors to different actors of the Cuban society. - Also, the future certification issue will contribute to the financial sustainability of the Centre.

Table with Stakeholders & Beneficiaries

	LOCAL		REGIONAL / NATIONAL	
	Direct	Indirect	Direct	Indirect
INDIVIDUAL	All participants in the IUC programme	UO student's community UO research and academic staff community Staff from University of Medical Sciences Military University	Students and staff from other Higher Education Institutions in the Eastern of Cuba High School teachers	Students and staff from the Cuban Higher Education System
ORGANISATIONAL	All projects in the IUC programme	All UO departments and faculties	University of Medical Sciences Military University	Centre of Neuroscience in Havana

SOCIETAL	Students interested in getting an English certificate	Employers interest in recruiting staff with English proficiency	Other local and regional stakeholders	Eastern region population

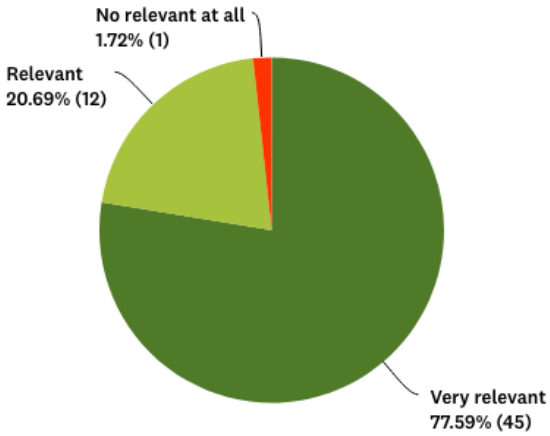
2.2. Analysis of Impact at Individual Level

The analysis of the programme/projects at **individual level** was based on: 1) the interviews carried out during the mission; 2) the online questionnaire answered by project participants from 15/01/2018 to 15/02/2018 (see Questionnaire in Annex 4.5). The questionnaire received 70 responses, around 50% of the participants.

The objective was to identify evidence with regards improved knowledge, increased management skills and improved behaviour/results applied to Higher Education (nº of articles increased, promotion at the university, new tasks, etc.). **Evaluators consider that the impact of the programme/projects at Individual level is high.**

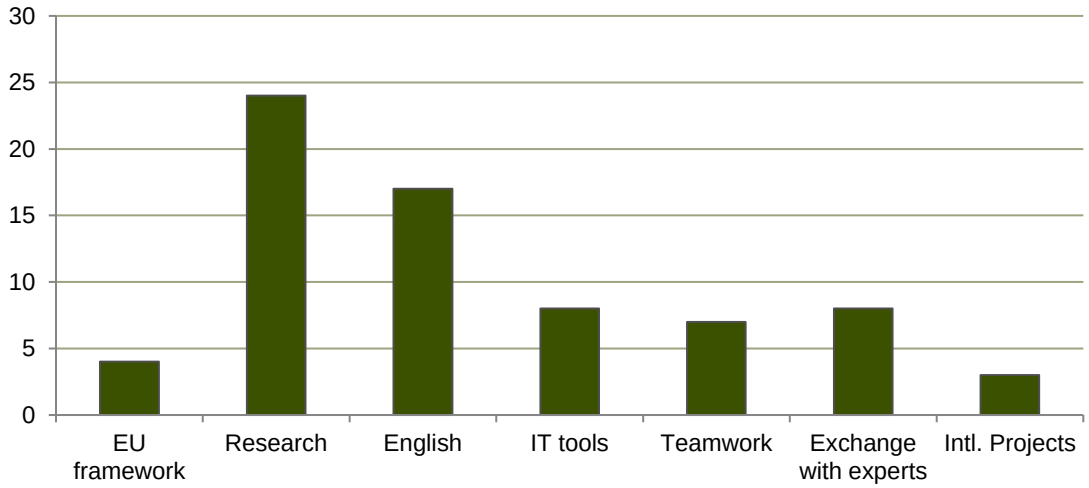
The main results of the analysis are the following.

Was the training/stay relevant for your career/research?



Trainings and stays in the framework of the project are considered Very Relevant or Relevant for 98,28 % of participants. Besides this significant figure, 100% confirmed to have **applied the content/results of the stay/training in their training and research activities**.

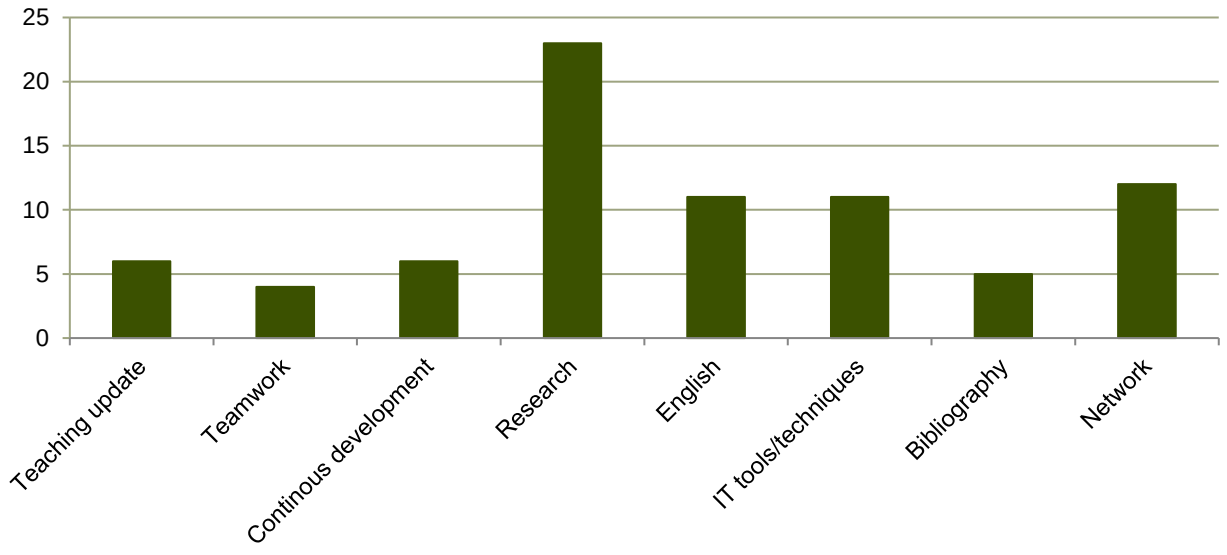
Which have been the most relevant aspects learnt during the training actions or study visits?



As it can be seen from the above graph, the main benefits perceived from trainees are related to different areas:

- "**Research**". Under this topic, respondents were underline that the training activities have been extremely useful for them in terms of improving their research methodology and this also affects the way in which they have improved the development of their research (how to obtain innovative results). Other ideas related to this aspect are a better knowledge on how to draft research papers, a wider access to bibliography.
- "**English**" has been also high ranked and this includes trainees' improvement in English as scientific communication language. Respondents underline that they had the possibility to reinforce their language, but also their communicative skills in this framework and this is allowing a better cooperation with international specialists/researchers.
- "**Exchange with experts**" has also been indicated as relevant for trainees. They explain that the different training activities have been important to get in contact and cooperate with international specialists and also to acquire social skills. This is also reinforcing their personal development.
- "**IT tools**": Many have been participants who point out that the training experiences gave them access to IT tools and technologies to better develop their research, depending on their discipline.
- "**Teamwork**": Others underline that the activities have reinforced their skills in terms of teamwork and sharing knowledge.
- "**EU framework**": thanks to the trainings, beneficiaries have acquired skills in terms of educational EU framework and the way to better design subjects; they are applying this to their daily job.
- **"International projects"**: respondents say that they are now more aware on how to define an innovative project idea in line with the call expectations.

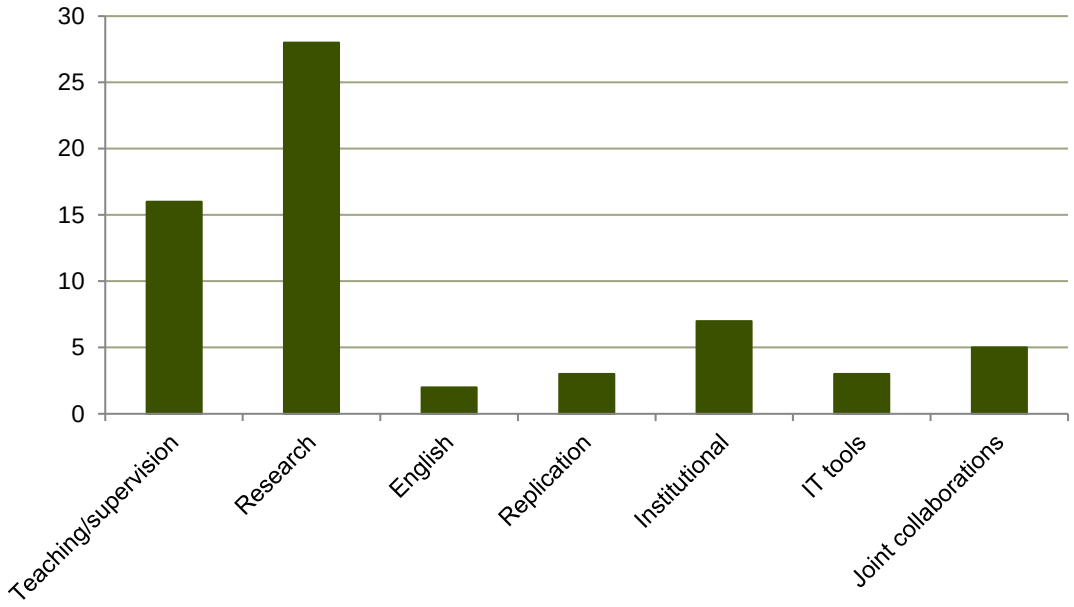
Could you please explain why the course/study visit was relevant/irrelevant?



Participants reinforce the idea that the training activities have been relevant, both for their personal and professional points of view. In more detail:

- "**Research**": improvement of their research. This includes research methodology and development, research techniques and experimentations, as well as scientific papers writing.
- "**English**": they also had the possibility of reinforcing their English skills, especially in terms of communication and transmission of the scientific works. Respondents underlined as very beneficial the fact that they now fell more confident in terms of how to present their research and perceive they have acquired tools and techniques to make their communication more effective.
- "**IT tools and techniques**": IT tools and techniques have been also mentioned as key points. Participants had the opportunity to get in touch and work with technology, not normally available at their university, and thus be in the conditions of implement certain experimentations that, without the capacity building actions, would not have been possible. This also applies to a better and wider access to bibliography.
- "**Network**": Training activities also gave beneficiaries the opportunity to widen their networks, both institutional, as well as at research disciplines level, and the occasion of cooperating and sharing research challenges and solutions with international experts. All of this, working with a teamwork approach.
- "**Teaching update**" Participants are applying some of the concepts learnt in terms of teaching methodology in their subjects, both at degree and master levels.

Could you please explain how you applied the knowledge acquired?



As we can appreciate above, the most mentioned applications are:

- **"Research"**: that includes the improvement of research methodology and development, drafting of papers, but also participation in international congresses and better and access to a wider bibliography.
- **"Teaching"**: a significant number of participants pointed out that they are exploiting the knowledge acquired in their teaching activities, both in terms of updating the subjects' contents, as well as improving their teaching methodology techniques. They are also improving in terms of students' supervision and mentoring.

In addition to these two main answer lines, respondents also pointed out that they are exploiting the knowledge acquired in terms of increasing their collaboration with international experts, but also replicating the training received, apply the knowledge acquired to the improvement of processes and tools at institutional level. A better use of IT tolls and of the English language is present also in this question.

2.3. Analysis of impact at Societal Level

The Analysis of the Impact at Societal Level has been organized via Case Studies. A template was proposed and agreed with the project leaders, and case studies were submitted to the Evaluators. The Evaluation team selected the most interesting case studies, those that showed clear evidence of impact at this level. **Evaluators consider that the Impact of the programme/projects at Societal level is high.**

2.3.1 P1. Environmental scientific services for the development of sustainable agriculture and to face the climatic change in the eastern of Cuba

Case Study title	**Stimulation of metabolites production by medicinal plants cultivated under effects of magnetic field treatment**
Nature of Case Study	Contribution of the activity to the role of HE as engine of Innovation
Type of Case of Study	Collaboration in R&D
Stage of development of the case	Highly developed practice
Background	Magnetic field treatment (MFT) technology have been widely introduce on crops cultivation in organoponics and urban agriculture systems by means of the irrigation system, showing positive effects of plant-growth stimulation, crops productivity, nutrients uptake efficiency, plant architecture and plant-disease protection. However, the action mechanism and physiological effects of MFT on elicitor's production, plant growth regulation, metabolites production and nutraceutical properties of medicinal plants is unknown. The present research showed the effects of MFT technology on production of bioactive compounds responsible of therapeutic effects in medicinal plants species.
Implementation	The effects of MFT technology on medicinal plant species of tomato, rosemary and sweet-marjoram were studied by means of 2 Joint PhD theses in collaboration with the Centre of Environmental Science at Hasselt University. The "In-vitro Plant Production Factory" (BIOFABRICA - Santiago de Cuba) was involved also in the research as external stakeholder. MFE increased metabolites concentration on leaves and fruits (tomato) and improved antioxidant, anti-inflammatory and hepatoprotective activity of bioactive compounds elicited by medicinal plant species. Metabolic profile of fruits and the action mechanism of antioxidant activity of tomato fruits were revealed.
Success Factors	Extended use of MFT technology on medicinal plants cultivation for human consumption and as raw material source for production of pharmaceutical formulations by the drug's production factory (Laboratorios Farmacéuticos Oriente).
Impact/Results/outcome	– 6 papers in *peer – review* journals – 4 presentations in international scientific events – 2 proceedings in international scientific events – 2 Joint PhD thesis defended – 1 MSc thesis defended (Pharmaceutical Services MSc programme) – 1 Undergraduate thesis defended (*B.S* in Biology) – 3 Professional practice works (undergraduate students *B.S.* in Biology) – 1 Scientific Award (Scientific Merit at University level) – **Agriculture producers and farmers increased the crops productivity (10%), yield and consequently incomes for commercialisation**
Conclusions	Results obtained from research projects associated to PhD thesis are innovative outcomes that are currently applied on medicinal plants production and drugs formulation, producing economics benefits for stakeholders.

2.3.2 P2. Research and applications in biomedical images and signal processing

Case Study title	Eastern Network of Medical Images (ENMI)
Nature of Case Study	Contribution of Higher Education as an engine of Innovation
Type of Case of Study	Collaboration in R&D and technology transfer
Background	During the last decade Cuba has introduced new medical image technology in the medical practice. Nevertheless, the introduction of ICT in the hospitals is still insufficient. This scenario is particularly complex in the eastern region of Cuba where the economic and social development has been historically lower. The Centre of Medical Biophysics, a research centre of Universidad de Oriente, has developed a processing, archiving and communication system (PACS) Imagis, which can be employed to create a network of medical images in the eastern region of Cuba. The ENMI pursue to increase the medical and technological development in the eastern area of Cuba creating ways of communication and exchange of information among the hospitals and the main hospitals of the country. The hardware infrastructure has been acquired through a Close the Gap project and the software tool is the PACS Imagis.
Implementation	The implementation of the ENMI include the following stages: 1. Acquisition and installation of the hardware infrastructure. 2. Creation of local networks inside the hospitals 3. Interconnection of the hospitals as an ICT network
Success Factors	- Close collaboration with the stakeholders. - Availability of the hardware and software components to accomplish the project. - Human resources with expertise in this area or R&D - Support of the VLIR programme to introduce new elements into Imagis PACS.
Impact/Results/outcome	- Improved ICT infrastructure in the hospital of the eastern region of Cuba. - New software tools to support the medical diagnosis - Extension of the image services to new areas of the hospital - Students of medical specialities benefited with the new possibilities of the network for improving the teaching process. - Improved medical services
Conclusions	The project is improving the quality of the medical service since the application of images processing tools and the possibility of consulting well recognised experts inside the network. The teaching process and research can be also benefitted through the creation of data bases of different diseases or image modalities. The ENMI can be extended in the near future to the whole country and could become a way to introduce further R&D results of Universidad de Oriente into the clinical practice.

2.3.3 P3. Biopharmaceutical products from natural sources to biotechnological development

Case Study title	**Inventory of the medicinal plant uses in the eastern provinces. A promising source of new drug candidates**
Nature of Case Study	Contribution to the ethno-botanical knowledge as intangible heritage and identity of the inhabitants of the eastern of Cuba.
Type of Case of Study	Activity not directly explained in the original document, but implicit due to the intention to find at least two bioactive lead compounds or extracts.
Background	The marked of drug from chemical synthesis has declined in the last decades to favour the natural products. That is why scientific community focus the attention on natural products. The east part of Cuba have one of the richest bio-diversities in the American continent. Fertile valleys, high mountains and a tropical weather stimulates since many centuries migrations all over the world. These factors (migration and endemism) created an endogen ethno-botanic knowledge different of the rest of Cuba and the Antilles, treasuring invaluable source of novel information leading new drug research.
Implementation	Together with the Eastern Centre of Ecosystems and Biodiversity (BIOECO), the Centre of Medical Toxicology (TOXIMED) and the Biological Experimental Laboratories (LABEX), team members and their student implemented a face-to-face interview to 2034 connoisseurs about the use of medicinal plants based on a semi-structured questionnaire. Respondents that refers the use of toxic/poisons plants were informed of the risks, suggesting the use of other species. At the same time, local medical authorities were informed. By this way, plant with endemic and limited distribution and/or with first use and or way of use report, were indicators considered to be explored. As result, from the 196 plant declared as medicinal, 12 were considered to scale-up their studies as potential source of antimicrobial drugs, testing 63 extracts/pure compounds defining two with good activity. By this way was validate the empirical use that the population makes of the nature and two isolated substances are proposed to follow up the studies as potential antimicrobials. Other activities as anti-inflammatory and antioxidant were also studied.
Success Factors	The equipment's supplied by VLIR-UOS; The capacity generated by the actions of the project, The scholarships of participants at Antwerp University; and the goodwill and compromise of the actors/stakeholders.
Impact/Results/outcome	It was validated the use of 12 medicinal plant for the inhabitants of the eastern of Cuba, offering also to the National Health System update information about new natural alternatives as well as the potential risks assumed by these empirical practices. This could generate in the future, a change in the policy of development of natural medicines. Considering the information offered to the practitioners of medicinal plants regarding the toxic plants, the communities where they acts were also beneficiaries of this knowledge exchange.
Conclusions	The actions implemented by the project offer valuable information to the inhabitant of the communities as well as to the National Health System regarding to the safe use of medicinal plants. At the same time, reveal new plant extract and compounds that can be candidates to future studies based in their "*in vitro*" pharmacological potentialities.

2.3.4 P4. The social sciences and humanities facing the challenge of social and cultural local development: enhancement of heritage preservation

Case Study title	**Impact of Heritage Education in three primary schools of Santiago de Cuba.**
Nature of Case Study	Contribution of Higher Education as an engine of Social Cohesion
Type of Case of Study	Cooperation activity between the University and local stakeholders in the field of Heritage Conservation.
Background	Project 4 worked with 3 primary schools in Santiago de Cuba municipality (Clodomira Acosta, Nacho Martí and Roberto Rodríguez), located in Vista Alegre and José Martí District neighborhoods. The task was the result of the diagnoses of their needs of knowledge and conservation of cultural heritage. No actions were devoted, before this project, to promote Heritage Conservation at primary school level.
Implementation	The implementation of this result in project P4 led to: - Interdisciplinary and inter-institutional collaboration in the relationship between university - school - communities. - New equipment for participants and donations for schools. - Motivation of the participating institutions because of importance of the topic. - New scientific and didactic results to support the process of improvement of programmes in primary education in Cuba.
Success Factors	- The knowledge and pedagogical experiences acquired during the first stage of the project in the field of local development and heritage conservation. - The new process of improvement of primary education in Cuba. - International collaboration. - Specialised human resources in the subject. - The social commitment of the university.
Impact/Results/outcome	- Improvement of the socialising cycle on the theme of heritage education at an educational level, articulating families, the community and the media. - Nº of benefitted students (2038) - Nº of benefitted teachers at the Schools (57) - The university-society link is strengthened based on the programmes and agreements established with different social institutions dedicated to Cultural Heritage. - The process of capacity building is improved: Teachers and IT staff. - The recognition of the institutions involved in the project as well as the interest of relevant donors (Belgian Embassy) in Cuba is achieved.
Conclusions	The project has contributed to the acquisition of knowledge, skills and behaviors related to cultural heritage in researchers, teachers, students and community in general. The culture of cooperation with the different stakeholders was strengthened, all of which has a significant impact on the individual, social and institutional levels. The initiative has great replication possibilities, and huge interest in the municipality and other critical stakeholders supporting sustainable development in Santiago.

2.3.5 P5. Energy, biofuels and clean technologies for sustainable development

Case Study title	**Improving rum production and producing economic, social and environmental benefits**
Nature of Case Study	Contribution to the role of HE as an engine of Economic Growth
Type of Case of Study	University – industry cooperation (not foreseen in the work plan)
Background	In order to obtain a high-quality Cuban rum, the primary rum has to be refined (filtered) through a fixed-bed GAC (granular activated carbon) contactor in order to balance some compounds that affect the sensorial attributes of the final product. The rum specialists (rum masters) pay carefully attention to the filtration process where the time of residence of the fluid in contact with the GAC is a critical variable to achieve the optimal and delicate balance of the key components responsible for the Cuban rum sensorial characteristics. This defines the commercial success and the competitive character of the spirit trading. At present, the efficiency in the exploitation of the GAC in the Cuban rum industry is quite low. The implementation of the project involved the synergic and interdisciplinary collaboration of different institutions. Participants in this initiative have been, from the Cuban side: UO, the major rum producer in Cuba (S.A.), and the industrial activated carbon plant (PROVARI). From the Flemish side: Hasselt University.
Implementation	An improved strategy of granular activated carbon (GAC) management in Cuban rum production has been enabled. The GAC management proposal embraced not only a proper and novel specific quantitative method for GAC characterisation but also a thermal regeneration process of the exhausted carbon in looking for economic, social and environmental advantages. A new quantitative method for GAC characterisation based on acoustic emission analysis was applied for native, exhausted and regenerated GAC characterisation. The proposed method is reliable, fast, robust and very suitable technique considering the rum producer facilities.
Success Factors	- The equipment supplied by VLIR-UOS & capacity generated by the actions of the project, mainly the PhD programme. - The input from Hasselt University (research staff & scholarships)
Impact/Results	- For the Cuban rum factory, the new GAC management strategy reduces the total cost of the rum production process with about 60% also producing a positive environmental impact due to the significant GAC landfills reduction. - For the activated carbon plant, a new service (thermal regeneration of GAC exhausted in rum production) can be incorporated in the business agenda of this plant with a new and potential client: the major rum producer in Cuba. - For UO, a new laboratory of applied acoustic which can be used to address new researches (masters, PhDs) on acoustic emission applications in other fields and the same time offering the high-porosity materials characterisation as a service for interested industries which involves adsorption or catalysis systems to be evaluated.
Conclusions	The project substantially improved the GAC exploitation in Cuban rum factories. The derived economic, social and environmental benefits of the new GAC management strategy are significant. The new proposed acoustic emission method to assess the GAC porous characteristics has opened new researches focused not only on GAC in rum production but also for assessing other industrial process with other adsorption systems covering several industrial scenarios where the new method can be a useful analytic tool in order to improve the efficiency of the adsorption or catalytic processes where the high-porosity materials are extensively applied.

2.3.6 TP1. Information and Communications Technology Infrastructure

Case Study title	**ICT infrastructure at the service of the society in Santiago de Cuba**
Nature of Case Study	Contribution of the activity to the role of Higher Education an engine of Social Cohesion.
Type of Case of Study	Lifelong learning
Background	Several years ago, the ICT Department of the Universidad de Oriente, has been leading projects related to the digitalization of society, most of these projects have had major impact on education, health and process management. This project was focuses on the development of the ICT infrastructure of the "Joven Club de Computación" in Santiago de Cuba province. The "Joven Club de Computación" are technology centres established by the Cuban government in 1987 to ensure free and open access to ICT for all the people of Cuba, with the mission to provide and raise an information technology culture in the community, with priority to children and young people, also these spaces have a protagonist's role in the formation of values around the process of computerisation of Cuban society.
Implementation	In the implementation 8 computers centres were created around the city of Santiago the Cuba, with more than 100 new computer facilities dedicated to the special education programmes of children and young people in charge of the administration of the "Joven Club de Computación".
Success Factors	- The good conditions of the hardware purchased and the capacity of the staff involved in the implementation. - Fruitful cooperation between ICT Department and the administration of the "Joven Club de Computación" in Santiago de Cuba.
Impact/Results/outcome	Increase of ICT capacity in Santiago de Cuba Province, to facilitate access of free services of educative courses, and open access to the national intranet (web content) for all citizen through the new computer capacities created in the involved "Joven Club de Computación". Support to the special education programmes of children and young people, in charge of the administration of the "Joven Club de Computación" through the new computer capacities created in the involved centres.
Conclusions	With the implementation of the project was possible to improve ICT infrastructure of the "Computer Youth Clubs" in Santiago de Cuba province. We facilitated 120 new computer capacities for this kind of computer centres that open their doors completely for free, for all the society of Santiago de Cuba, inhabited by more than 400 000 people. All the equipment installed have in hand of IT specialists that provide the security and the necessary hardware and software maintenance to keep working the infrastructure in good conditions, and to be possible the development of all the concerning activities in the computer labs.

2.3.7 TP2. Improvement of Basic and Natural Sciences in the Universidad de Oriente

Case Study title	**KTTO is consolidated as the interphase between the University and stake-holders in support of the scientific policy at UO**
Nature of Case Study	Contribution to the role of HE as an engine of Innovation
Type of Case of Study	Technology transfer- governance (developing stage)
Background	Before starting VLIR programme the technology transfer (TT) activity was not conceived as part of innovation and research activities at UO. TT was done only by research institutions as the Centre of Medical Biophysics (CBM) and National Centre of Applied Electromagnetism (CNEA), working with *close – loop* research projects and giving scientific services as consultancy to enterprises. The IP register was financed by the University but there wasn't a proper management system of IP and a strategy for valorisation of patents, models and trademarks. Agreements with external stakeholders don't conceived integrated actions of research projects, production of joint publications and patents, as protection of IP generated in the University. There wasn't an institutional intellectual property policy.
Implementation	With the implementation of VLIR programme at UO, a subproject for set – up a knowledge/tech transfer office (KTTO) was developed by TP2. During the first two years of the programme the activities of this subproject were focused on teaching and capacitation of University community in topics of IP. In 2015, the management of TT activities was hold by the Commercialisation Department, an administrative structure created during the integration process at UO focused firstly on international academic services. The Commercialisation Department has developed several activities in four main directions: a) Capacity building in IP and TT topics to scientific leaders, research project coordinators and scientific community. b) Organisation and institutionalisation of bureaucratic structure on charge of IP and tech transfer. c) Setting-up the UO policies and strategies for IP protection and management, as valorisation of research. d) Consolidation of KTTO as the interphase between the University and stake-holders in terms of innovation and valorisation of research results. These activities have been supported by TP2 and by the administrative structure of the University.
Success Factors	Improvement culture on IP and valorisation of innovative research results in the University community. Recognition the role and institutionalisation of KTTO by decision makers of the University. Improvement agreements between the University and stakeholders. Capacity building in tech transfer and IP. Valorisation of research results and outputs. Increase of incomes for commercialisation of scientific services, licencing of patents and royalties is expected as the number of patents, models and trademarks.
Impact/Results/outcome	- Approval of institutional policies and strategies for valorisation and IP management; - Approval of KTTO ascribed to the Vicerrectory of Science and Innovation in the new structure of the University. - 5 socialization of research results and outputs with stakeholders. - 3 courses of IP were tough to scientific leaders, researchers and project leaders of the University. - Incomes for scientific services and consultancy increase in 15% per year in the last two years.
Conclusions	The activities developed by the Commercialisation Department of UO and supported by TP2 have provoked organisationorganisational changes in the links University-enterprise that favours the development of TT in the Eastern region of Cuba.

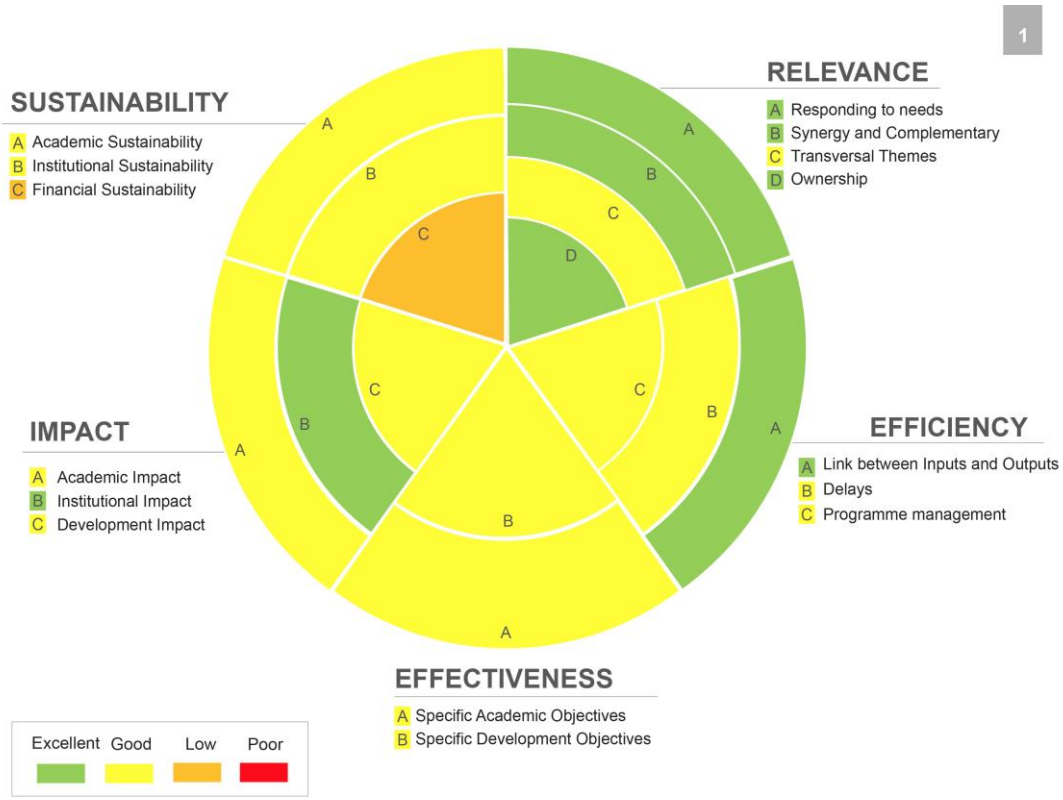
2.3.8 TP3. Strengthening Foreign Language Skills for Science and Technology

Case Study title	***Train the trainer* courses for English language (EL) teachers from the Medical and Military Universities in Santiago de Cuba**
Nature of Case Study	EL Training in Higher Education as promoter of Social Cohesion / Mobility
Type of Case of Study	Curriculum development. New postgraduate and elementary courses on English language have been designed by EL teachers from the Medical and Military Universities based on the training received in CATFLAg.
Background	The Cuban cooperation in public health with English-speaking countries or countries where English is lingua franca has motivated EL teachers from the Medical University to implement postgraduate English courses for doctors, nurses, dentists and technicians who go to work abroad. On the other hand, EL teachers from the Military University have been working in South Africa to fight illiteracy in the poorest sectors of the society. The preparation received in CATFLAg by these teachers in the different *Train the trainer* courses with foreign and national experts allowed them to increase their didactic competence, communicative proficiency, and expertise in curriculum design.
Implementation	The implementation of this training brought: - new syllabuses for postgraduate courses. - new syllabuses for teaching children in South African poor regions.
Success Factors	- Capacity building and knowledge acquired by the EL teachers in curriculum design and other pedagogical and linguistic aspects. - More visibility of the scientific activity of UO in the world. - Fruitful cooperation between the new Faculty of Foreign Languages and the Medical and Military Universities.
Impact/Results/outcome	The implementation of the training benefited: - 4 EL teachers from the Medical and Military Universities got their Master´s degree. - 2 EL teachers from the Military University are currently in South Africa applying and validating new syllabuses for children. - A new Preparatory Faculty was opened at the Medical University in Santiago where EL teachers are putting into practice new syllabuses for postgraduate courses. - As a result of this new faculty, more than 90% of the medical staff passes the test and interview at embassies in Havana to go to work abroad.
Conclusions	The *Train the trainer* courses organized by TP3 enhanced the EL proficiency of teachers, their skills in designing courses according to new requirements and approaches, and also their intercultural competence, which is quite necessary to the success of any international collaboration. Likewise, these courses strengthened collaboration links with other institutions both locally and internationally.

2.4. Evaluation of the programme level

Considering the Logical Framework (LFM) at programme level (and in particular the specific objectives and intermediate results), the programme level could be interpreted as the sum of the project results. As stipulated in the ToR, the programme level should be evaluated differently from the specific projects. Looking into the project details, it has become obvious that the programme level is mainly focused on assuring the coordination of the different projects and on taking advantage of the synergies.

The figure below summarises the scoring in each criterion at programme level.



2.4.1 Relevance

1.1. Responding to needs Score: **Excellent**	- The effects of the programme at UO are quite extensive. In terms of identity, thanks to the creation of the tech transfer and intellectual property office (TTO) and its new policy, the university was able to 'rescue' expired brands and trademarks, thereby giving back the identity of the university as an entity leader in this topic in Eastern Cuba. Since then, TTO has been monitoring, supporting and protecting the research production of all university areas. - Another remarkable aspect is the new research culture acquired in the university community derived in the design of a new strategy of sciences. The former 72 research lines have been integrated in only ten lines, now more focused on the priorities of the country. - This change of policy started since the construction of the own LFM and working system of the IUC programme phase I, stimulating this important change in the management of the sciences.
1.2. Synergy Score: **Excellent**	- Synergy has been an important factor to potentiate the production of new ideas and results. A good and collaborative connection has been created between Cuban and Flemish researchers, which have propitiated in some cases the solution of difficulties faced during the daily work. Also, a good synergy has been created among the projects, which have shared activities, equipment and even team members. For example, two Joint PhD theses defended in P1 project were presented in the health sciences jury, which is more closely linked to P2 and P3 projects (which are focused on human health). The use of the cell culture laboratory of P3 by other team members of P1 and P5, as well as the NMR laboratory (P2) by P5 for charcoal characterisation, also

	demonstrates this synergy. The Eastern Network of Medical Images was the result of a collaborative work of P2 and TP1. - Local actors have been kept close to the programme development through their participation in workshops organised by the projects with the support of the programme. Additional actions have been coordinated through the university and its research centres with the support of the programme. International actors have been also involved in the programme with coordinated actions oriented to support the programme activities. In this sense, more than fifteen international projects were financed by different sources (e.g. Close the Gap, Erasmus+, etc.).
1.3. Transversal Themes (gender, environment and D4D) Score: **Good**	See 1.6

1.4. Ownership Score: **Excellent**	- From the beginning of the programme, VUB through the international relationship mobility office (IRMO), has done all the purchases of equipment and consumables needed for the programme, a task which has been time-consuming and has required great effort. Also, the shipment has been faced by IRMO. VUB has also assumed responsibility for the donations of IUC equipment from all Flemish universities. - The fast feedback and the previous good relations with the stakeholders guaranteed the attainment and application of the scientific results. It highlights their participation in workshops on tech transfer and intellectual property as well as the formulation of new joint projects. The training of the stakeholder human resources, as a result of the programme, reaches a high impact dealing with the increase of their academicals and scientific degrees and skills.

2.4.2 Efficiency

P.2.1. Link between Inputs and Outputs Score: **Excellent**	- For the performance of the scientific activities of the programme, an amount of 570,000 Euros has been allocated annually, which has been distributed among projects according to the achievement of the objectives set for the work period. - The designation of the amounts available for each project was approved in the Joint Steering Committee Meeting that took place every year in Cuba to evaluate the results achieved. - This year, with the equipment acquired, UO is now able to open three scientific laboratories, which further strengthens the infrastructure for the development of scientific tasks related to the project or with the research lines drawn up by the Universidad de Oriente. - The budget line of personnel costs, which had been allocated financing for installation and maintenance for the laboratory equipment acquired from companies trained to carry out these tasks in the territory, mainly ICT, were not executed because the Universidad de Oriente assumed the expenses of hiring this staff with their

	budget. - Expenditures in the budget line of scholarships are discreetly disregarded in the first three years, mainly due to the fact that some doctoral students who had to have stays funded as Joint PhD, had to do them in another variant of a scholarship (short-term) for organisational reasons and demands documentaries of the Belgian Universities. - A specific analysis of the financial management of the project is presented below.

2.2. Delays Score: **Good**	- Procurement processes are slow because of the political situation (embargo) and long bureaucratic processes. - One aspect to point out is that some of the equipment purchased had an extra delay as a consequence of the lack of conditions in the host laboratory regarding not only to rooms, but also to electric conditions and water supplies. - The limited tender of provisions and accessories in the Cuban market induced the necessity to use other labs and equipment from other institutions in Cuba or abroad, in order to reach the results planned by the programme, affecting the objectives as little as possible.
2.3. Programme Management Score: **Good**	- The steering committee meetings have resulted in scenarios to make local and joint decisions and the best place for the discussion and integrated planning of the programme's development. As well as propitiating the necessary synergy for collaborative work between research projects, facilitating the assumption of shared responsibilities and integrating the results. - The joint steering committee meetings took place once a year on special dates to discuss annual reports, annual planning for the next year and other management tasks. - The local steering committee took place once a month with activities focused on planning, budget expenditure, coordination of activities, mobility and evolution of the PhD students. - In general, the participation in the steering committees was good. In case of potential absence of any project leader, it was represented by the project manager which was previously selected for each project. This guaranteed a responsible participation of all projects in the decision-making processes.

Financial Management Analysis at programme level
(belonging to 2.1. Link between Inputs and Outputs)

Table 1 presents budget allocations by project from year 2013 (year 1 of the programme) to 2017 (year 5 of the programme).

Table No 1. Initial budget approved per year for each project of the Programme

Approved budget from Y1 to Y5					
Project	**AP 2013**	**AP 2014**	**AP 2015**	**AP 2016**	**AP 2017**
P1	80000	80000	70000	90000	68665
P2	80000	80000	70000	90000	82655
P3	70000	66000	70000	76000	76000
P4	40000	40000	58000	50000	47000
P5	40000	40000	40000	50000	64975
TP1	96000	85000	60000	45000	45000
TP2	32000	31600	60000	54000	50705
TP3	32000	47400	42000	15000	35000
PSU	54400	54400	54400	54400	54400
E1	17100	17100	17100	17100	17100
E2	28500	28500	28500	28500	28500
Total	570000	570000	570000	570000	570000

- The distribution of the project considers the following **headings**:
  - P1. Scientific environmental services for the development of sustainable agriculture and to face climate change in the Eastern region of Cuba.
  - P2. Research and applications of biomedical images and signal processing
  - P3. Biopharmaceutical products from natural sources for biotechnological development.
  - P4. Social and humanistic sciences facing the challenge of local socio-cultural development: the improvement of heritage conservation.
  - P5. Energy, biofuels and clean technologies for sustainable development.
  - TP. 1. Technological infrastructure for computerisation and communications.+TP 2. Strengthening of basic and natural sciences for innovation.
  - TP. 3. Strengthening of skills in foreign languages for the areas of science and technology.
  - PSU. Programme support unit
  - E1. Administration funds (Belgian part).
  - E2. Administration funds (Cuban part).
- From the analysis in Table 1 it can be seen that the largest sums of money are concentrated in projects P1, P2, P3 and TP1.
- On the one hand, projects P1, P2 and P3 needed a laboratory infrastructure that required sufficient money to ensure the acquisition and assembly of new laboratories. On the other hand, they are the projects that have the largest number of joint doctoral students, whose stays require a strong financing to be able to reach the objective in a short period of time.
- In the case of TP1, the allocations were high to guarantee the acquisition of the ICT infrastructure that would increase the services throughout the university, however, as of year 3, the figures were diminished since in 2015 the Data Centre was inaugurated, which managed to completely change the situation that was presented in 2012 in terms of ICT services.

- The administration costs (E1 and E2) are constant directives provided by the financier, in order to carry out administrative tasks and thus not affect the budgets of the projects, both scientific and transversal.
- Table 2 presents the behaviour of the expenses by budget line in each project for each year of work until 2016. The costs for 2017 are not included because the accounting of the year in both parts is not yet closed.

Table No 2. Balance of expenses by budget line

Budget balance per budget lines. External evaluation 2018												
Year	2013			2014			2015			2016		
	Approved	**Done**	**Ratio**	**Approved**	**Done**	**Ratio**	**Approved**	**Done**	**Ratio**	**Approved**	**Done**	**Ratio**
Budget line	(in Euros)											
A. Investment cost	242833	268127,46	110,4	189910	216484	114,0	156475	205442,04	131,3	140381	214010,63	152,4
B.Operational Cost	188792	177049,24	93,8	192532	198383	103,0	168499	166880,88	99,0	204676	118009,34	57,7
C. Personnel Cost	0	0	0,0	8500	0	0,0	4000	0	0,0	2738	0	0,0
D. Scholarship cost	92775	78132,84	84,2	133458	109965,78	82,4	195426	151349,68	77,4	176605	184475,07	104,5
E. Administration cost	45600	45600	100,0	45600	45600	100,0	45600	45600	100,0	45600	45600	100,0
Total	570000	568909,54	**99,8**	570000	570432,78	**100,1**	570000	569272,6	**99,9**	570000	562095,04	**98,6**
Over/under expenditure		1090,46			-432,78			727,4			7904,96	

- As shown in Table 2, the assigned budgets have a fairly adequate percentage of execution in general figures (very close to 100%), with only year 4 in which 7 905 euros were no longer consumed. The reason for this difference was fundamentally that this year, the work system of VLIR-UOS stopped being fiscal year (April to March) for calendar year (January-December), therefore, the time available to execute the tasks that supported the objectives of the programme, was only eight months.
- Analysing the execution by budget line, it is observed that in investment expenses it is where the figures are executed over all the years. This decision was approved as a way to promote the laboratory infrastructure of the UO, which allowed us to have thirteen new laboratories, equipped with modern technology to support research of doctoral students, teachers and undergraduate students from inside and outside of the university.
- In the current year (2018), with the equipment acquired, PSU is now able to open another three scientific laboratories, which further strengthen the infrastructure for the development of scientific tasks related to the project or with the research lines drawn up by the Universidad de Oriente.
- The budget line of personnel costs, which had been allocated to the financing for installation, maintenance and training costs related to the laboratory equipment acquired from companies were not executed because of local limitations with regard to personnel payments. Universidad de Oriente within its own institutional budget/system.

- Expenditures in the budget line of scholarships are discreetly disregarded in the first three years, mainly due to the fact that some doctoral students who had to have stays funded as Joint PhD, had to do them in another variant of a scholarship (short-term) for organisational and administrative reasons.

2.4.3 Effectiveness

3.1. Specific Academic Objectives Score: **Good**	- From eighteen objectives, seventeen were fully achieved and some of them have surpassed the original proposal. - The non-achieved objectives 'A virtual observatory to provide specialised information gives service to 100% of municipal universities' was because a complete laboratory infrastructure seems that will be completed for year 6. - Evaluators found evidence that the programme has supported the implementation of partners' policy/actions, for instance, in research at institutional level. - There are also changes in awareness, knowledge, skills at institutional level. For instance, English proficiency of Cuban partners is in progress, but should continue to facilitate communication and academic cooperation. - PhDs were selected by the Cuban team members, provoking some complaints in the Flemish counterparts. As a consequence, new guidelines have been proposed for future selection processes, although they have not yet been implemented.
3.2. Specific Development Objectives Score: **Good**	- The programme has contributed to the foreseen specific development objectives, achieving an interesting impact in the Eastern region and always considering local and national priorities. - Also, its contribution to the innovation management mechanisms aiming to impact key development areas of the Eastern region of Cuba has been initiated with the activities of the different projects, especially with the creation of the TTO. - With the new PhD programmes, new opportunities have been opened for stakeholders to increase their scientific level. - Withinin six years, the university campus will be connected at a gigabit network and Wi-Fi services with 99% time line operational and connected with the Municipal Universities Centre (SUMs). This ICT infrastructure has allowed the municipalities SUM to have internet access, which was impossible before the beginning of the programme.

2.4.4 Impact

4.1. Academic Impact Score: **Good**	- The qualification in new techniques and scientific methodologies of the professors of UO as a result of their research stays in Belgium allowed them to increase their technical and methodological level and in that way, using this in their interaction with the students during their activities as professors. - The effects of the programme at UO are quite extensive. In terms of identity, the university rescued all the brands and trademark expired; therefore, giving back the identity of the University as an entity leader concerning this topic at the Eastern region of Cuba. - Another remarkable aspect is the new research culture acquired in the university community derived in the design of a new strategy of sciences at the university built by the fusion of 72 research lines into 10 integrated lines focused in the priorities of the country. This change of policy started since the construction of the own log frame and working system of the IUC-programme phase I, stimulating this important change in the management of the sciences. - A special relationship has been established with the National Scientific Commission Board, requesting some changes in the national policy to get PhD degrees such as: To include a Flemish member into the jury, to make a presentation with slides written in English. - The participation of professors in international meetings and congresses increased the visibility of the research activity at UO and Flemish partners. - Training of professors from Eastern universities (Universities of Camaguey, Moa and Granma), is another impact, with four students getting their PhD degrees using the facilities of the programme and several getting their Master degree.

4.2. Institutional Impact Score: **Excellent**	- The visibility of the university was increased, and as a consequence; the possibilities to attract funds from other entities increased as well. During phase I, two Close the Gap -NGO-VLIR-UOS, two TEAM VLIR-UOS projects, one cooperation project with Calabria University (Italia) and one cooperation project with the University of New Brunswick (Canada) started. Also, eight research projects from the Brazilian Council of Science (CAPES-MES), one research project. - Several young professors accessed grants offered by the Erasmus and Erasmus-plus programmes. This IUC-programme also increased the possibility to be part of important networks projects such as the network on energy (UK, Brazil, Cuba,) as well as the national ICT network of Cuba (sponsored by VLIR-UOS) with the participation of the Universities of UCI, Pinar del Rio, UCLV, Camaguey, Cienfuegos, Holguin and Universidad de Oriente. - The created Centre for Advanced Training on Foreign Languages (CATFLAg) has been offering courses and training to the entire university community as well as to other Eastern institutions such as the Medical Sciences University of Santiago de Cuba and Centre of Neurosciences (Havana).

	- The capacity building created by the research projects have also impacted the university community, being used by students of different majors and faculties, as well as a research platform for professors from areas not directly linked to the IUC-programme. - Due to the programme actions, the local government of Santiago de Cuba got access to important data necessary to develop an adequate policy in the water chlorination for the Santiago de Cuba province. This was possible thanks to the creation of the laboratory for water quality assessment that was collecting and evaluating water quality parameters.
4.3. Development Impact Score: **Good**	- The impact on ICT of the East of Cuba becomes evident not only for the services that the supercomputer (HPC) and the data centre offers to the entire community, but two ICT labs were created in Eastern universities as well, one in “Instituto Superior Minero Metalúrgico” of Moa in Holguin province and one in Universidad de Guantánamo. Furthermore, nine Computer Youth Clubs are operational within the City of Santiago de Cuba with access for all their inhabitants, as well as three PC laboratories in three different elementary schools were updated with new PCs. - The costs associated with rum production in Cubaron SA enterprise have been diminished thanks to the implementation of a new protocol for manufacturing filters using regenerated activated carbon. This application was generated as result of the programme and protected by a patent. - Five services including the determination of 17 parameters are implemented for stakeholder and organisation in the society linked with this necessity. Moreover, the local government of Santiago de Cuba got access to develop an adequate policy in the water chlorination for Santiago de Cuba province. A risk management protocol for algae, potentially toxic in Santiago de Cuba bay, was put into place bythe local government, but with possibilities to be used in other bays. - Ten software tools have been introduced in Hospitals in Santiago de Cuba, Camaguey, Granma and Las Tunas, providingservices to patients. - Creation of Eastern network of medical images (ENMI) established in the Eastern region of Cuba which has allowed better interaction between medical services in 21 hospitals of the country. The ENMI project has been discussed and supported by the director of informatics of the Cuban Public Health Ministry. - The exploration of biodiversity in the Eastern region of Cuba, which registered almost 200 plants with medicinal properties. - Improvement of the primary education programmes are stimulated and followed up in the three schools engaged in the project: Clodomira Acosta Ferrales and Nacho Martínez primary schools from the Vista Alegre neighborhood, and Roberto Rodríguez of the José Martí neighborhood. This has contributed efficiently to the process of improvement of primary education syllabuses that takes place in the MINED nationally. - The creation of an IP and technology transfer office allowed the monitoring, promotion and organisation of this activity.

2.4.5 Sustainability

5.1. Academic Sustainability Score: **Good**	- The programme has created the main conditions to preserve the results and positive effects already obtained at UO. An important factor is the change in the way of thinking related to scientific research by the team members and the university community. - More than 40 new PhDs are ready to be incorporated as full professors at UO, and this is a clear contribution in order to guarantee the continuation and valorisation of this mind changing process as well as the replication in the Eastern region of Cuba. - All these improvements have created conditions for deeper transformations but more time and resources are needed in this sense. For example, the laboratories created by the programme can be employed to support new services from university to the community, which could be a source of financial resources, but they require to be accredited according to international regulations. - However, sustainability at the moment of the evaluation is not the main priority, which will be worked and focused on during the second phase as a strategic aspect, mainly in the direction of technology transfer of scientific results, postgraduate formation of professional from stakeholders and other enterprises of the territory, and capturing international students in the MSc and PhD programmes created in the programme in phase I.

5.2. Institutional Sustainability Score: **Good**	- Evaluators may confirm that decision-making structures are in place, and that there is a strong commitment in order to guarantee institutional sustainability. - UO has contributed with additional funding and covered some infrastructural activities derived from the creation of the new thirteen laboratories, mainly with the payment of workforce and also construction materials. - We also identify some measures to retain and upgrade human capital, although they should be more explicit. - The intensification and formalisation of interuniversity academic cooperation has been increased not only in the areas of the programme, but also in additional topics.
P.5.3. Financial Sustainability Score: **Low**	- All the planned activities were covered by the budgets. The expenditure analysis presented by the manager of the programme, from the beginning of the programme until 2016 show that more than 98 % of the designed budget has been used to support the activities planned, which looks like a pretty good indicator. - During phase I, several funding sources have complemented the initial budget of the action, from funding coming from the participation in other international programmes (see 4.2) to donations mainly in ICT infrastructure. - However, evaluators may not confirm that the financial sustainability will be guaranteed because of different reasons. The most important one is that UO will need some structural changes, that seems to be initiated, in order to facilitate that departments and faculties may commercialise their services or academic offer. The set-up of a TTO is a first

	step, but this should come with specific regulations and a change in the culture with regards to the new role of the university in the Republic of Cuba (not only teaching and researching, but also transferring the technology and knowledge).

3 LESSONS LEARNED

Communication & cooperation

- Intercultural exchange and fluid communication has contributed to the acceptance of the work developed by each participant. Promoting sharing views on frameworks and methodologies has played a major role in this phase;
- The importance of the English level of participants should not be underestimated, as this is crucial to the development of effective working environments (PhD participants, research projects, etc.). English proficiency has not been a precondition, causing problems in the development of activities;
- The increasing knowledge and experience acquired by Cuban participants with regards to project and research management has had a direct impact in project activities.

Planning

- Delays provoked by procurement processes and local bureaucracy frequently were not considered when planning activities, affecting the timing of the activities;
- KRAs, LFM and specific objectives are not always aligned, which, in the end, provoked problems in monitoring and reporting;
- Impact of training activities has not been planned, showing the lack of a culture of accountability at programme and institutional level.

Multidisciplinary work

- Promoting multidisciplinary work has created a fertile environment at UO. This cultural change has boosted the development of new projects and activities not initially foreseen in the planning, which has increased the impact of the action (see some examples in ‘2.4 Analysis of Impact at Society level’). However, this process is gradual and requires time and additional actions (worshops, seminars, etc.).

4 RECOMMENDATIONS

R.1 Strategic Level: Improve Financial Sustainability

Recommendation for UO

Create conditions for successful technology transfer

UO is performing well when it comes to academic and research activities. Transferring/ commercialising technology is quite a new activity for UO, although there are some relevant examples also in the higher education sector (e.g. UCI). With regards this issue the legal framework at national level is evolving and more autonomy is expected in the next months (from the interview with the Ministry of Higher Education). However, UO should also respond by promoting the recently created TTO, which may identify the needs of the local stakeholders (industry, etc.) to promote joint projects and consultancy of the departments. This will contribute to the sustainability of the action by capturing funds which may also contribute to the retention of staff. This culture change may also include a system of incentives for participants in Technology Transfer activities funded by the industry. Following this idea, it is recommended to visit other universities at institutions in the country (UCI, UHA, CUJAE, BioCubaFarma), and benchmark TT practices to get inspiration from actors working in the same regulatory framework.

Recommendation for UO

Create conditions for capturing international students

Every year, UO is increasing the number of international students enrolling in different programmes. Most of these students are coming from the region (Caribbean, South America) and paying their fees. The programmes developed in the framework of the IUC are highly demanded by international students. This is an interesting source of funding for UO that has not been properly exploited until now because of different reasons: 1) No marketing or business plan to capture international students per programme exists; 2) Taylor-made courses are not frequent and usually imply long bureaucratic processes; 3) Enrollment process and accommodation facilities are not in line with similar offers in the region. Those issues should be improved in order to exploit this promising source of funding for the different projects.

Recommendation for UO

Promote a good mix of applied research

Related with the first recommendation, project activities (academic, research, PhDs) should achieve a good mix of applied research and a focus on direct technology transfer, as well as basic research with long-term potential for innovation. This will facilitate technology transfer and sustainability of activities. There are several examples (see case studies) of projects working in this direction, although the policy should be more explicit and it should be materialised in specific actions (including the incentives policy mentioned before).

Recommendation for UO and Flemish partners

Boost participation in research funding calls

Some of the IUC participants are publishing articles in peer reviewed journals and have interesting scientific results. Thus, those researchers are ready to participate in international research calls, like Horizon2020, where competitive funding provides interesting opportunities. Scientific Fundraising Training may contribute to increase the opportunities of those researchers who have interesting scientific results but limited experience in those kinds of calls.

R2. Operative Level

Recommendation for UO

Encourage an accountability culture

During the evaluation process, the Evaluation Team has been working with the numerous indicators established in the LFMs and work plan. The team members requested complementary quantitative and qualitative data, identifying some minor weaknesses regarding the accountability of activities. One example is the assessment of the quality of the services provided by different projects, which are usually not evaluated/assessed by the final user (e.g. CATFLAg). Thus, we would like to encourage UO to develop an accountability framework which may support the quality assessment and transparency of its activities.

Recommendation for UO and Flemish partners

Improve PhD Process

PhD processes (including PhD defenses) should be streamlined and should consider both local frameworks (Cuba and Belgium). Conflicts regarding the selection of PhD candidates should be avoided via clear and transparent guidelines agreed upon by the different stakeholders.

Recommendation for UO

Increase involvement of the UO hierarchy

The UO hierarchy should be more involved in programme activities and should contribute directly to the following issues: 1) Speeding up internal processes and increasing the visibility of the results obtained by the different projects; 2) Increasing the institutional impact of the programme via the institutionalisation of the relevant initiatives (PSU, CATFLAG, etc.); 3) Establishing Quality Assessment processes at project/programme level; 4) Improving/increasing the local commitment in the initiative.

Recommendation for UO

Promote English proficiency of participants

UO participants in the project should reinforce their English proficiency via intensive training courses. Efforts in the last two years have been declining and have negatively impacted some activities of the project. On the other hand, for the Flemish side, project leader's efforts to create a basic knowledge of Spanish are also assessed very positively from the Cuban side and may also be promoted via courses, etc.

Recommendation for Flemish partners

Increase the link with other cooperation programmes for development actors and projects

Evaluators identified several interesting and relevant initiatives in different areas (international scientific cooperation, technology transfer, etc.). Those initiatives are funded by other donors (EU, DAAD, AECID, etc.) and may have interesting synergies with current projects.

Recommendation for UO

Rethink purchase/procurement processes

Purchase/procurement processes should be streamlined and should take advantage of the experience acquired by the IUC, and also of the Network programme (dealing with these issues for a long time).

Recommendation for UO

Intensify the interaction with the industry

UO via TTO should intensify the contact and interaction with the local industry via more frequent networking events. Networking should not only be focused onat regional level but also in other regions where the local industry may have any interest in UO research results.

Recommendation for VLIR-UOS

Reorganisation of projects and preparation of phase 2

The synergies between projects are high, and most of the time, fruitful relationships are established. In some cases, these relationships resulted in specific research/academic outputs, changing the initial scope of the project. Thus, reorganisation of projects and potential merges of some initiatives should be promoted, in order to take advantage of the synergies, and also to adapt to the new needs of UO.

However, evaluators are not able to recommend, with the existing information, specific actions in this direction because of the organisation of the evaluation (available documents, reports delivered by participants, etc.) did not facilitate this task. For instance, the “Way forward”-part of the self-assessment report should be planned/developed more in detail to facilitate the contribution of participants. Little useful information may be found in this section of the report. Besides that, previous meetings or instructions from VLIR-UOS for participants on how to proceed for the next phase could have contributed to more information/evidence for the evaluators to report on this issue.

Besides that, higher attention should be provided to the development of the future LFM and Theory of Change, improving indicators and facilitating the monitoring of the projects (see also: 1.4.4 Limitations of the evaluation).

5 Annexes

5.1. Methodology (scoring)

General approach - Scoring

4-Excellent: the overall (Criterion) is of excellent quality. Additional measures are not needed.

3-Good: Minor room for improvement exists, however with minor effect on (Criterion); See recommendations No:

2-Low: Major room for improvement exists, with a potential of major effects on (Criterion) of the Programme/project. See recommendation No:

1-Poor: The (Criterion) is of poor quality and extra necessary measures are urgently need to realize the (Criterion). See recommendation No:

Excellent	Good	Low	Poor

Programme Level- Scoring

Criterion 1: Definition of Relevance

The extent to which the objectives of a programme are consistent with beneficiaries' requirements, country needs, global priorities and partners' and donors' policies." Retrospectively, the question of relevance often becomes a question of whether the objectives or intervention logic of an action are still appropriate given changed circumstances.

Sub-criterion 1.1.: The extent to which the programme is addressing immediate and significant problems and needs of the concerned partners (institutional) as well as regional and national policy makers, with reference to the MDGs, PRSP and other multilateral policy documents.

Sub-criterion 1.1. Responding to the needs		
Scores	**Definition Scores**	**Topic and item lists**
4-Excellent	The programme is aligned with National and regional policies, university policy and with VLIR-UOS country strategy. The overall relevance is of excellent quality. Additional measures are not needed.	• Process of programme formulation • Demonstrated links with the policy documents. • In case of non-alignment, why? • Are partners (universities and governmental agencies) involved in Context Analysis? How? • What could be improved in the process of formulating programme objectives? • Are the chosen approaches,
3-Good	The programme is partly aligned with National, regional and university policies and with VLIR-UOS strategy. Minor room for improvement exists, however with minor effect on increasing the relevance of the programme. See recommendations No`s:	
2-Low	The programme is partly aligned with National, regional and university policies and with VLIR-UOS strategy. Major room for improvement exists, with	

Sub-criterion 1.1. Responding to the needs		
Scores	**Definition Scores**	**Topic and item lists**
	potential major effects on the relevance of the Programme. See recommendation No`s:	methodologies, partnerships and implementation modalities relevant? • Is the programme responsive to changes in the local priorities and development context?
1-Poor	The programme is not aligned with National, regional and university policies and with VLIR-UOS strategy. The relevance of the programme is of poor quality and extra necessary measures are urgently needed. See recommendation No`s:	

Sub-criterion 1.2. Synergy and complementarity with other (Belgian) actors.

Sub-criterion 1.2. Synergy and Complementary		
Scores	**Definition Scores**	**Topic and item lists**
4-Excellent	Synergy and complementary (with other actors) have been identified and common activities are implemented. The overall synergy and complementary is of excellent quality. Additional measures are not needed.	• Are there any synergy and complementary issues with other programmes funded by VLIR-UOS and/or other donors in the country or in the region? Has possibilities for synergy explored? What has been done to create synergy? What activities have been organized with others? Are activities planned? • Is there any synergy and complementary issue within the programme (and between the different projects)? Has possibilities for synergy explored within the programme? What activities have been organized with other projects?
3-Good	Synergy and complementary (with other actors) have been identified and but common activities are not yet implemented. Minor room for improvement exists. See recommendations No`s:	
2-Low	Synergy and complementary (with other actors) have been partly identified and common activities are not yet implemented. Major room for improvement exists. See recommendation No`s:	
1-Poor	Synergy and complementary are not identified and common activities are not implemented. The synergy and complementary of the programme is of poor quality and extra necessary measures are urgently needed. See recommendation No`s:	

Sub-criterion 1.3. Link with transversal themes of Belgian development cooperation: gender, environment and D4D (Digital for Development).

Transversal themes: can elements be found at the programme and project level. Recommendations for the next phase as the transversal themes were not a criterion during programme formulation. The main question is how these new priorities of the Minister can be integrated in the second phase.

Sub-criterion 1.3. Transversal Themes		
Scores	**Definition Scores**	**Topic and item lists**
4-Excellent	Transversal themes (gender, environment and D4D) are identified and transversal theme activities and outputs are formulated. The overall approach on transversal themes is of excellent quality. Additional measures are not needed.	• Are women and men equally approached? • Is a gender policy in place? What measures and activities are implemented? • Is an environmental policy and strategy in place? What measures and activities are implemented? • Is there a D4D policy and strategy? What measures and activities are implemented? • Do specific projects contribute to better transversal theme approach at university level?
3-Good	Transversal themes (gender, environment and D4D) are identified and transversal theme activities and outputs are not formulated. Room for improvement exists. See recommendations No`s:	
2-Low	Transversal themes (gender, environment and D4D) are partly identified and transversal theme activities and outputs are not formulated. Major room for improvement exists. See recommendation No`s:	
1-Poor	Transversal themes (gender, environment and D4D) are not identified and transversal theme activities and outputs are not formulated. The transversal theme approach is of poor quality and extra necessary measures are urgently needed. See recommendation No`s:	

Sub-criterion 1.4.: Ownership. Demonstration of effective commitment of all partners in the programme.

Sub-criterion 1.4. Ownership		
Scores	**Definition Scores**	**Topic and item lists**
4-Excellent	All key stakeholders are still very committed to the programme. The overall commitment is of excellent quality. Additional measures are not needed.	• Do all key stakeholders still demonstrate effective commitment? (taking up responsibilities, reporting, motivation, focus) • Why not? • What is the interest of the stakeholders of being part of the programme?
3-Good	All key stakeholders are still committed to the programme. Minor room for improvement exists, however with minor effect on increasing ownership of the programme. See recommendations No`s:	
2-Low	Some key stakeholders are losing commitment to the programme. Major room for improvement exists, with a major effect on increasing ownership of the programme. See recommendations No`s:	

Sub-criterion 1.4. Ownership		
Scores	**Definition Scores**	**Topic and item lists**
1-Poor	A majority of key stakeholders are losing commitment to the programme. The ownership of the programme is of poor quality and extra necessary measures are urgently needed. See recommendation No`s:	

Criterion 2: Definition of Efficiency

"A measure of how economically resources/inputs (funds, expertise, time, etc.) are converted to results."

Sub-criterion 2.1 Links between inputs and outputs. Demonstration of effective commitment of all partners in the programme.

Sub-criterion 2.1. Links between inputs and outputs		
Scores	**Definition Scores**	**Topic and item lists**
4-Excellent	The activities of the programme are implemented in cost-efficient manner. A similar cost-efficiency logic has been implemented for all projects. The overall cost-efficiency of the programme is of excellent quality. Additional measures are not needed.	• Do the resources correspondent to the needs of the action? • Have the outputs been produced/delivered in a cost-efficient manner? • Spending rates • Activities are chosen based on cost-considerations.
3-Good	Most of the activities of the programme are implemented in cost-efficient manner. Minor room for improvement exists, however with minor effect on increasing cost-efficiency of the programme. See recommendations No`s:	
2-Low	Most of the activities of the programme are implemented in cost-efficient manner. Major room for improvement exists, with major effect on increasing cost-efficiency of the programme. See recommendations No`s:	
1-Poor	Most of the activities of the programme are not implemented in cost-efficient manner. The cost-efficiency of the programme is of poor quality and extra necessary measures are urgently needed. See recommendation No`s:	

Sub-criterion 2.2. Delays

Sub-criterion 2.2. Delays		
Scores	**Definition Scores**	**Topic and item lists**
4-Excellent	The programme did not face any important delay in activities and in case of delay, revisions have been planned and implemented. Additional measures are not needed.	• To what extent are inputs available on time? • If there are delays, how important are they? • Have the reasons be identified? Have revisions. • Have revisions of planning been properly implemented?
3-Good	The programme did not face any important delay in activities and in case of delay, revisions have been planned but not yet implemented. Minor room for improvement exists, however with minor effect on the timing of implementation. See recommendations No`s:	
2-Low	The programme did face important delays in activities and revisions have been planned but not yet implemented. Major room for improvement exists. See recommendations No`s:	
1-Poor	The programme did face important delays in activities and revisions have not been made. The implementation of activities is of poor quality and extra necessary measures are urgently needed. See recommendation No`s:	

Sub-Criterion 2.3. Programme Management: quality of programme management

Sub-criterion 2.3. Programme Management		
Scores	**Definition Scores**	**Topic and item lists**
4-Excellent	The overall programme management is of excellent quality. Additional measures are not needed.	• The management manual is well-developed and applied at programme and project level. • Is the programme adequately monitored and/or assessed by local and Flemish partners? • Planning, monitoring and reporting system in place? Timely reporting? • Good cooperation and communication between programme and local university, between programme and projects, between projects.
3-Good	The overall programme management is of good quality. Minor room for improvement exists, however with minor effect on increasing the quality of programme management. See recommendations No`s:	
2-Low	The overall programme management is of low quality. Major room for improvement exists, with a major effect on increasing the quality programme management. See recommendations No`s:	
1-Poor	The overall programme management is of poor quality and extra necessary measures are urgently needed. See recommendation No`s:	

Criterion 3: Definition of Effectiveness

"The extent to which the programme' s objectives are expected to be achieved, taking into account their relative importance."

Sub-criterion 3.1. Specific Academic Objectives		
Scores	**Definition Scores**	**Topic and item lists**
4-Excellent	The specific objectives (and outputs) will be achieved in case of successful implementation during the second phase. The programme is on track in order to achieve the specific objectives. Additional measures are not needed.	• Has the expected progress in terms of outputs properly achieved? • Is the quality of the output satisfactory? • Are the outputs still likely to the expected outcomes? • Is there evidence that the action supports the implementation or development or change of partners' policy/actions? • Are there changes in awareness, knowledge, skills at institutional level? • Are there changes in organisationorganisational capacity (skills, structures, resources) • The indicators for the specific academic objective have been achieved.
3-Good	The specific objectives (and outputs) will be achieved in case of successful implementation during the second phase. The programme is on track in order to achieve the specific objectives. Minor room for improvement exists. See recommendations No`s:	
2-Low	The specific objectives (and outputs) will be partly achieved. Major room for improvement exists, with a major effect on increasing programme management. See recommendations No`s:	
1-Poor	The specific objectives (and outputs) won`t be achieved. Extra necessary measures are urgently needed. See recommendation No`s:	

Sub-criterion 3.2. Specific Development Objective		
Scores	**Definition Scores**	**Topic and item lists**
4-Excellent	The specific objectives (and outputs) will be achieved in case of successful implementation during the second phase. The programme is on track in order to achieve the specific objectives. Additional measures are not needed.	• Has the expected progress in terms of outputs properly achieved? • Is the quality of the outputs satisfactory? • Are the outputs still likely to the expected outcomes? • Is there evidence that the action supports the implementation or development or change of partners' policy/actions in order to create impact on society? • Are there changes in aware-
3-Good	The specific objectives (and outputs) will be achieved in case of successful implementation during the second phase. The programme is on track in order to achieve the specific objectives. Minor room for improvement exists. See recommendations No`s:	
2-Low	The specific objectives (and outputs) will be partly achieved. Major room for improvement exists, with a major effect on increasing programme management. See recommendations No`s:	

Sub-criterion 3.2. Specific Development Objective		
Scores	**Definition Scores**	**Topic and item lists**
1-Poor	The specific objectives (and outputs) won`t be achieved. Extra necessary measures are urgently needed. See recommendation No`s:	ness, knowledge, skills at institutional level in order to create changes in society? • Are there changes in organisationorganisational capacity (skills, structures, resources) in order to serve society • The indicators for the specific development objective have been achieved.

Criterion 4: Definition Impact

"Potential positive and negative, primary and secondary long-term effects produced by the programme, directly or indirectly, intended or unintended."

Remark: in this mid-term evaluation, only indications (stories of impact) possible.

Sub-criterion 4.1. Academic Impact		
Scores	**Definition Scores**	**Topic and item lists**
4-Excellent	The academic performance of the university has been increased significantly since the start of the programme (as a result of the programme) and will further increase during phase 2 if implemented in the same manner. Additional measures are not needed.	• Added value of the programme for the academic performance of the university. • Increased publication in international refereed journals. • Increased academic capacity of staff members. • Increased collaborative academic activities not funded by the programme.
3-Good	The academic performance of the university has been increased significantly since the start of the programme (as a result of the programme) and will further increase during phase 2 if implemented in the same manner. Minor room for improvement exists. See recommendations No`s:	
2-Low	The academic performance of the university has been increased partly since the start of the programme (as a result of the programme). Major room for improvement exists, with a major effect on increasing academic performance of the university. See recommendations No`s:	
1-Poor	The academic performance of the university hasn`t been increased since the start of the programme (as a result of the programme). Extra necessary measures are urgently needed. See recommendation No`s:	

Sub-criterion 4.2. Institutional Impact		
Scores	**Definition Scores**	**Topic and item lists**
4-Excellent	Major Institutional reforms at university level are implemented as a result of the programme. Additional measures are not needed.	• Policy changes at institutional level? Changes in behavior at institutional level? • the extent to which the collaboration has sparked other departments to initiate interuniversity collaboration, joint capacity building, fund raising etc.
3-Good	Major Institutional reforms at university level are planned as a result of the programme. Minor measures are needed. See recommendations No`s:	
2-Low	Major Institutional reforms at university level are planned as a result of the programme. Major measures are needed. See recommendations No`s:	
1-Poor	No institutional reforms are implemented or planned. Extra necessary measures are urgently needed. See recommendation No`s:	

Sub-criterion 4.3. Development Impact		
Scores	**Definition Scores**	**Topic and item lists**
4-Excellent	Policy development in society is based on programme experiences and results. Programme experiences and results are used for new initiatives. Additional measures are not needed to increase impact	• The extent to which the collaboration has raised interest of policy makers and academics, and how the partner university is called upon or is pro-actively developing collaboration models that could be fed into policy advice. • The extent of the activities developed with local or regional stakeholders, contributing to the economic and social development. • Added value of the programme for the role of the university as a development actor: the extent to which the collaboration has led to joint developmental activities or similar collaborative models at the regional and global level.
3-Good	Programme experience and results are known in the broader society but have not yet caused new initiatives. Minor additional efforts are needed to increase impact. See recommendations No`s:	
2-Low	Programme experience and results are known in the broader society but have not yet caused new initiatives. Major additional efforts are needed to increase impact.	
1-Poor	Programme experience and results are known in the broader society. Extra necessary measures are urgently needed. See recommendation No`s.	

Criterion 5: Definition Sustainability

"Sustainability is the continuation of benefits from a development intervention after major development assistance has been completed, the probability of continued long-term benefits, and the resilience to risk of net benefit flows over time."

Sub-criterion 5.1. Academic Sustainability		
Scores	**Definition Scores**	**Topic and item lists**
4-Excellent	Academic sustainability is guaranteed or will be guaranteed in the second phase. Measures are identified and will be implemented at the second phase. Additional measures are not needed.	• The extent to which the collaboration has raised interest of policy makers and academics, and how the partner university is called upon or is pro-actively developing collaboration models that could be fed into policy advice. • The extent of the activities developed with local or regional stakeholders, contributing to the economic and social development. • Added value of the programme for the role of the university as a development actor: the extent to which the collaboration has led to joint developmental activities or similar collaborative models at the regional and international level.
3-Good	Academic sustainability will be guaranteed in the second phase. Measures are partly identified and will be implemented at the second phase. Minor additional efforts are needed to increase sustainability. See recommendations No`s:	
2-Low	Measures for academic sustainability are in the process of identification. Major additional efforts are needed to increase sustainability. See recommendations No`s:	
1-Poor	Academic sustainability will not be guaranteed in the second phase. Extra necessary measures are urgently needed. See recommendation No`s:	

Sub-criterion 5.2. Institutional Sustainability		
Scores	**Definition Scores**	**Topic and item lists**
4-Excellent	Institutional sustainability is guaranteed or will be guaranteed in the second phase. Measures are identified and will be implemented at the second phase. Additional measures are not needed.	• Decision-making structures are in place to guarantee sustainability. • Measure are taking to retain and upgrade human capital continuously. • Maintenance of Infrastructure is guaranteed. • Strengths and weaknesses of the institution in terms of institutionalizing the collaboration. • Intensification and/or formalisation of interuniversity consultations (North-South and South-South).
3-Good	Institutional sustainability will be guaranteed in the second phase. Measures are partly identified and will be implemented in the second phase. Minor additional efforts are needed to increase sustainability. See recommendations No`s:	
2-Low	Measures for institutional sustainability are in the process of identification. Major additional efforts are needed to increase sustainability. See recommendations No`s:	
1-Poor	Institutional sustainability will not be guaranteed in the second phase. Extra necessary measures are urgently needed. See recommendation No`s:	

Sub-criterion 5.3. Financial Sustainability		
Scores	**Definition Scores**	**Topic and item lists**

4-Excellent	Financial sustainability is guaranteed or will be guaranteed in the second phase. Measures are identified and will be implemented at the second phase. Additional measures are not needed.	• financial viability
		• incorporation of costs into the budget of the partner university.
		• other sources of finance:
		  ○ Ability to attract external funds
		  ○ co-funding by the partner university (matching funds)
		  ○ (financial) involvement of private actors
		  ○ system of scholarships

3-Good	Financial sustainability will be guaranteed in the second phase. Measures are partly identified and will be implemented at the second phase. Minor additional efforts are needed to increase sustainability. See recommendations No`s:	
2-Low	Measures for financial sustainability are in the process of identification. Major additional efforts are needed to increase sustainability. See recommendations No`s:	
1-Poor	Financial sustainability will not be guaranteed in the second phase. Extra necessary measures are urgently needed. See recommendation No`s:	

Project Level- Scoring

Criterion 1: Definition Scientific Quality:

"The extent to which a project has a ground-breaking nature and ambition (excellence)."

Sub-criterion P.1.1. Quality of Research		
Scores	**Definition Scores**	**Topic and item lists**
4-Excellent	The project has implemented innovative and outstanding research which have been published in international refereed journals. No additional measures are needed to increase innovative research results.	• the extent to which research is cutting edge. • Involvement of stakeholders in the South. • Extent to which the results have been incorporated in local or international refereed journals.
3-Good	The project has implemented innovative and outstanding research but the results are not yet published in international refereed journals. Activities are planned to publish research results or academic articles are submitted to international refereed journals.	
2-Low	The project has replicated existing research and results are not (yet)published in international refereed journals.	
1-Poor	The research component of the project failed. Extra necessary measures are urgently needed. See recommendation No`s:	

Sub-criterion P.1.2. Quality of Education		
Scores	**Definition Scores**	**Topic and item lists**
4-Excellent	The overall education objectives are of excellent quality. Additional measures are not needed.	• the extent to which new education practices are cutting edge. • Involvement of South Stakeholders. • Extent to which alumni easily get a job which fits their education profile. • the number of fellowships acquired from foundations. • Regional and international integration of education practices.
3-Good	The overall education objectives are of good quality. Room for improvement exists. See recommendations No`s:	
2-Low	The overall education objectives are of low quality. Major room for improvement exists, with potential major effects on the education quality of the Programme. See recommendation No`s:	
1-Poor	The overall education objectives are of poor quality. Extra necessary measures are urgently needed. See recommendation No`s:	

Criterion 2: Definition Relevance

"The extent to which the objectives of a project are consistent with beneficiaries' requirements, country needs, global priorities and partners' and donors' policies."

Sub-criterion P. 2.1. Responding to the needs		
Scores	**Definition Scores**	**Topic and item lists**
4-Excellent	The project is aligned with National and regional policies, university policy and with VLIR-UOS country strategy. The overall relevance is of excellent quality. Additional measures are not needed.	• Process of project formulation • Demonstrated links with the policy documents. • In case of non-alignment, why? • Are partners (universities and governmental agencies) involved in Context Analysis? How? • What could be improved in the process of formulating project objectives? • Are the chosen approaches, methodologies, partnerships and implementation modalities relevant? • Is the project responsive to changes in the local priorities and development context?
3-Good	The project is partly aligned with National, regional and university policies and with VLIR-UOS strategy. Minor room for improvement exists, however with minor effect on increasing the relevance of the project. See recommendations No`s:	
2-Low	The project is partly aligned with National, regional and university policies and with VLIR-UOS strategy. Major room for improvement exists, with potential major effects on the relevance of the project. See recommendation No`s:	
1-Poor	The project is not aligned with national, regional and university policies and with VLIR-UOS strategy. The relevance of the project is of poor quality and extra necessary measures are urgently needed. See recommendation No`s:	

Sub-criterion P.2.2. Synergy and Complementary		
Scores	**Definition Scores**	**Topic and item lists**
4-Excellent	Synergy and complementary (with other actors) have been identified and common activities are implemented. The overall synergy and complementary is of excellent quality. Additional measures are not needed.	• Are there any synergy and complementary issues with other projects and programmes funded by VLIR-UOS and/or other donors in the country or in the region? • Have possibilities for synergy explored? What has been done to create synergy? What activities have been organized with others? Are activities planned? • Is there any synergy and complementary issue within the programme (and between the different projects)? • Have possibilities for synergy explored within programme? Have activities been organized together with other projects?
3-Good	Synergy and complementary (with other actors) have been identified but common activities are not yet implemented. Minor room for improvement exists. See recommendations No`s:	
2-Low	Synergy and complementary (with other actors) have been partly identified and common activities are not yet implemented. Major room for improvement exists. See recommendation No`s:	
1-Poor	Synergy and complementary are not identified and common activities are not implemented. The synergy and complementary of the programme is of poor quality and extra necessary measures are urgently needed. See recommendation No`s:	

Sub-criterion P.2.3. Transversal Themes		
Scores	**Definition Scores**	**Topic and item lists**
4-Excellent	Transversal themes (gender, environment and D4D) are identified and transversal theme activities and outputs are formulated. The overall approach on transversal themes is of excellent quality. Additional measures are not needed.	• Are women and men equally approached? • Is a gender policy in place? What measures and activities are taken? • Is an environmental policy and strategy in place? What measures and activities are taken? • Is there a D4D policy and strategy? What measures and activities are taken?
3-Good	Transversal themes (gender, environment and D4D) are identified and transversal theme activities and outputs are not formulated. Room for improvement exists. See recommendations No`s:	
2-Low	Transversal themes (gender, environment and D4D) are partly identified and transversal theme activities and outputs are not formulated. Major room for improvement exists. See recommendation No`s:	
1-Poor	Transversal themes (gender, environment and D4D) are not identified and transversal theme activities and outputs are not formulated. The transversal theme approach is of poor quality and extra necessary measures are urgently needed. See recommendation No`s:	

Sub-criterion P.2.4. Ownership		
Scores	**Definition Scores**	**Topic and item lists**
4-Excellent	All key stakeholders are still very committed to the project. The overall commitment is of excellent quality. Additional measures are not needed.	• Do all key stakeholders still demonstrate effective commitment? (taking up responsibilities, reporting, motivation, focus) • Why not? • What is the interest of the stakeholders of being part of the project?
3-Good	All key stakeholders are still committed to the project. Minor room for improvement exists, however with minor effect on increasing ownership of the project. See recommendations No`s:	
2-Low	Some key stakeholders are losing commitment to the project. Major room for improvement exists, with a major effect on increasing ownership of the project. See recommendations No`s:	
1-Poor	A majority of key stakeholders are losing commitment to the project. The ownership of the project is of poor quality and extra necessary measures are urgently needed. See recommendation No`s:	

Criterion 3: Definition Efficiency

"A measure of how economically resources/inputs (funds, expertise, time, etc.) are converted to results."

Sub-criterion P.3.1. The intermediate results have been delivered		
Scores	**Definition Scores**	**Topic and item lists**
4-Excellent	All the intermediate results are delivered. Additional measures are not needed.	• Check values on the output-indicators. • KRA`s • Are indicators SMART?
3-Good	The intermediate results are partly delivered. Minor room for improvement exists. See recommendations No`s:	
2-Low	The intermediate results are partly delivered. Major room for improvement exists. See recommendations No`s:	
1-Poor	The intermediate results are not delivered. Extra necessary measures are urgently needed. See recommendation No`s:	

Sub-criterion P.3.2. Relationship between Objectives, results and means.		
Scores	**Definition Scores**	**Topic and item lists**
4-Excellent	There is clear link between means, outputs and objectives. The input is carefully thought-out. The project did not face any important delay in activities and in case of delay, revisions have been planned and implemented. Additional measures are not needed.	• The means/inputs are justifiable and are carefully thought-out solution for the defined outputs. • Outputs (intermediate

Sub-criterion P.3.2. Relationship between Objectives, results and means.		
Scores	**Definition Scores**	**Topic and item lists**
3-Good	There is clear link between means, outputs and objectives. The input is partly thought-out. The project did not face any important delay in activities and in case of delay, revisions have been planned but not yet implemented. Minor room for improvement exists, however with minor effect on the implementation modalities. See recommendations No`s:	results) contribute to the project objectives. • To what extent are inputs available on time? • If there are delays, how important are they? • Have the reasons be identified? Have revisions • Have revisions of planning been properly implemented?
2-Low	The link between means, outputs and objectives is blurred. Inputs are too expensive in relation to the outputs. The project did face important delays in activities. Revisions have been planned but not yet implemented. Major room for improvement exists. See recommendations No`s:	
1-Poor	The link between means, outputs and objectives is blurred. Inputs are far too expensive in relation to the outputs The project did face important delays in activities and revisions have not been made. The implementation of activities or the link between activities and output/objectives is of poor quality. Extra necessary measures are urgently needed. See recommendation No`s:	

Sub-criterion 3.3. Project Management		
Scores	**Definition Scores**	**Topic and item lists**
4-Excellent	The overall project management is of excellent quality. Additional measures are not needed.	• The management manual is well-developed and applied at project and project level. • Is the project adequately monitored and/or assessed by local and Flemish partners? • Planning, monitoring and reporting system in place? Timely reporting? • Good cooperation and communication within the project.
3-Good	The overall project management is of good quality. Minor room for improvement exists, however with minor effect on increasing the quality of project management. See recommendations No`s:	
2-Low	The overall project management is of low quality. Major room for improvement exists, with a major effect on increasing project management. See recommendations No`s:	
1-Poor	The overall project management is of poor quality and extra necessary measures are urgently needed. See recommendation No`s:	

Criterion 4: Definition of Effectiveness

"The extent to which the project`s objectives are expected to be achieved, taking into account their relative importance."

Sub-criterion P.4.1. Specific Academic Objectives		
Scores	**Definition Scores**	**Topic and item lists**
4-Excellent	The specific objectives (and outputs) will be achieved in case of successful implementation during the second phase. The project is on track in order to achieve the specific objectives. Additional measures are not needed.	• Has the expected progress in terms of objectives properly achieved? • Is the quality of the outputs satisfactory? • Are the objectives still likely to the expected objectives? • Is there evidence that the action supports the implementation or development or change of partners' policy/actions? • Are there changes in awareness, knowledge, skills at institutional level? • Are there changes in organisationorganisational capacity (skills, structures, resources) • The indicators for the specific academic objective have been achieved.
3-Good	The specific objectives (and outputs) will be achieved in case of successful implementation during the second phase. The project is on track in order to achieve the specific objectives. Minor room for improvement exists. See recommendations No`s:	
2-Low	The specific objectives (and outputs) will be partly achieved. Major room for improvement exists, with a major effect on increasing programme management. See recommendations No`s:	
1-Poor	The specific objectives (and outputs) won`t be achieved. Extra necessary measures are urgently needed. See recommendation No`s:	

Sub-criterion P.4.2. Specific Development Objective		
Scores	**Definition Scores**	**Topic and item lists**
4-Excellent	The specific objectives (and outputs) will be achieved in case of successful implementation during the second phase. The project is on track in order to achieve the specific objectives. Additional measures are not needed.	• Has the expected progress in terms of outputs properly achieved? • Is the quality of the outputs satisfactory? • Are the objectives still likely to the expected objectives? • Is there evidence that the action supports the implementation or development or change of partners' policy/actions? • Are there changes in awareness, knowledge, skills at institutional level? • Are there changes in organisationorganisational capacity (skills, structures, resources). • The indicators for the specific development objective have been achieved.
3-Good	The specific objectives (and outputs) will be achieved in case of successful implementation during the second phase. The project is on track in order to achieve the specific objectives. Minor room for improvement exists. See recommendations No`s:	
2-Low	The specific objectives (and outputs) will be partly achieved. Major room for improvement exists, with a major effect on increasing project management. See recommendations No`s:	
1-Poor	The specific objectives (and outputs) won`t be achieved. Extra necessary measures are urgently needed. See recommendation No`s:	

Criterion 5: Definition of Impact

"Potential positive and negative, primary and secondary long-term effects produced by the programme, directly or indirectly, intended or unintended."

Remark: in this mid-term evaluation, only indications (stories of impact) possible.

Sub-criterion P.5.1. Individual Impact		
Scores	**Definition Scores**	**Topic and item lists**
4-Excellent	A significant number of scholars/students/staff members has increased their knowledge and skills as result of the project. They use the newly required knowledge and skills. No Additional measures are not needed in the second	• Scholars/Students/staff members from the project are embedded in society and economic life and are contributing significantly. • Individual capacities of scholars/students are increased and they are using upgraded skills and knowledge in their jobs (even outside of the university).
3-Good	A significant number of scholars/students/staff members has increased their knowledge and skills as result of the project. They use the newly required knowledge and skills partly. Minor room for improvement exists in the second phase. See recommendations No`s:	
2-Low	A low number of scholars/students/staff members has increased their knowledge and skills as result of the project. They use the newly required knowledge and skills partly. Major room for improvement exists, with a major impact at individual level. See recommendations No`s:	
1-Poor	A low number of scholars/students/staff members has increased their knowledge and skills as result of the project. They don`t use the newly required knowledge and skills. Extra necessary measures are urgently needed. See recommendation No`s:	

Sub-criterion P.5.2. Academic & Institutional Impact		
Scores	**Definition Scores**	**Topic and item lists**
4-Excellent	Major departmental/university reforms are implemented as a result of the project and academic performance increased as a result of the project Additional measures are not needed.	• Added value of the project for the academic performance of the university. • PhD students and PhD holders (VLIR-UOS scholarships) are embedded in the department and are implementing research. • Increased number of publication in international refereed journals • Increased number of PhD and MSc-holders as a result of the project. • Policy changes at departmental/university level? Changes in behavior at departmental/university level? • the extent to which the collaboration has sparked other departments.
3-Good	Major departmental/university reforms are planned as a result of the project and academic performance increased as a result of the project. Minor measures are needed. See recommendations No`s:	
2-Low	Major departmental/university reforms at university level are planned as a result of the project and academic performance did not increase substantially. Major measures are needed. See recommendations No`s:	
1-Poor	No departmental/university reforms are implemented or planned and academic performance did not increase. Extra necessary measures are urgently needed. See recommendation No`s:	

Sub-criterion P.5.3. Development Impact (impact on society)		
Scores	**Definition Scores**	**Topic and item lists**
4-Excellent	Policy development in society is based on project experiences and results. project experiences and results are used for new initiatives. Additional measures are not needed to increase impact.	• The extent to which the collaboration has raised interest of policy makers and academics, and how the partner university is called upon or is pro-actively developing collaboration models that could. be fed into policy advice • The extent of the activities developed with local or regional stakeholders, contributing to the economic and social development. • Added value of the project for the role of the university as a development actor: the extent to which the collaboration has led to joint developmental activities or similar collaborative models at the regional level.
3-Good	Project experiences and results are known in the broader society but have not yet caused new initiatives. Minor additional efforts are needed to increase impact. See recommendations No`s:	
2-Low	Project experiences and results are known in the broader society but have not yet caused new initiatives. Major additional efforts are needed to increase impact.	
1-Poor	Project experiences and results are known in the broader society. Extra necessary measures are urgently needed. See recommendation No`s:	

Criterion 6: Definition Sustainability.

"Sustainability is the continuation of benefits from a development intervention after major development assistance has been completed, the probability of continued long-term benefits, and the resilience to risk of net benefit flows over time."

Sub-criterion P.6.1. Academic & Institutional Sustainability		
Scores	**Definition Scores**	**Topic and item lists**
4-Excellent	Academic sustainability is guaranteed or will be guaranteed in the second phase. Measures are identified and will be implemented at the second phase. Additional measures are not needed.	• The extent to which the collaboration has raised interest of policy makers and academics, and how the partner university is called upon or is pro-actively developing collaboration models that could be fed into policy advice. • The extent of the activities developed with local or regional stakeholders, contributing to the economic and social development. • Added value of the project for the role of the university as a development actor: the extent to which the collaboration has led to joint developmental activities or similar collaborative models at the regional level. • Are individual academics committed to continue to work within the department. • Joint projects • Strengths and weaknesses of the department in terms of institutionalizing the collaboration • Intensification and/or formalisation of interuniversity consultations (North-South and South-South). • Measures are taking for staff retention of trained staff.
3-Good	Academic sustainability will be guaranteed in the second phase. Measures are partly identified and will be implemented at the second phase. Minor additional efforts are needed to increase sustainability. See recommendations No`s:	
2-Low	Measures for academic sustainability are in the process of identification. Major additional efforts are needed to increase sustainability. See recommendations No`s:	
1-Poor	Academic sustainability will not be guaranteed in the second phase. Extra necessary measures are urgently needed. See recommendation No`s:	

Sub-criterion P.6.2. Financial Sustainability		
Scores	**Definition Scores**	**Topic and item lists**
4-Excellent	Financial sustainability is guaranteed or will be guaranteed in the second phase. Measures are identified and will be implemented at the second phase. Additional measures are not needed.	• financial viability • incorporation of costs into the budget of the partner university. • other sources of finance – • Ability to attract external funds • co-funding by the partner university (matching funds). • Joint new projects (non project-funding.
3-Good	Financial sustainability will be guaranteed in the second phase. Measures are partly identified and will be implemented at the second phase. Minor additional efforts are needed to increase sustainability. See recommendations No`s:	
2-Low	Measures for financial sustainability are in the process of identification. Major additional efforts are needed to increase sustainability. See recommendations No`s:	
1-Poor	Financial sustainability will not be guaranteed in the second phase. Extra necessary measures are urgently needed. See recommendation No`s:	

5.2. Mission Programme

Día	Hora	Actividades	Participan	Lugar
17/01/2018	-	Reunión con el MES	Ministro, VMP, DRI, Coordinadores Proyectos VLIR IUC-UO, Red Nacional	Ministerio de Educación Superior (MES)
18/01/2018 - 20/01/2018	-	Reunión y Entrevistas con Organismos y Beneficiarios en Ciudad de la Habana y Pinar del Rio	Entidades y Organismos participantes	Lugares seleccionados

PROGRAMMEA VLIR
IUC-UNIVERSIDAD DE ORIENTE

Día	Hora	Actividades	Participan	Lugar
22/01/2018	8.30 AM	Recibimiento Institucional UO – Rectora y Consejo de Dirección / 8.30 am / Salón del Rectorado	Rector, Consejo Dirección, Coordinador Local, Lideres de Proyecto VLIR	Salón de Rectorado
	9:30 AM	Presentación del proyecto transversal TP2	Todos los Miembros del Proyecto	Salón del Laboratorio de Física. Facultad de Ciencias Naturales y Exactas
	10:00 AM	Entrevista con el Líder del Proyecto TP2	Pedro Mune Bandera	
	10:30 AM	Entrevistas con beneficiarios directos	Entrevista a profesores y estudiantes	
	11:30 AM	Entrevista con directivos de la Facultad	Decana Ciencias Naturales y Exactas, Vice Decana y Jefes de Departamento de Física y Química	
	12:00 AM	Entrevista con Departamento de Comercialización, Propiedad Intelectual y Transferencia de Tecnología	Teresa Orbera Ratón y especialista de la Oficina	Salón de la VRIP
	12.30 PM	ALMUERZO		
	2:00 PM	Presentación del Proyecto P3	Todos los miembros del Proyecto P3	FCNE
	2:30 PM	Entrevista con miembros del Proyecto P3	Miembros del Proyecto P3	
	3:00 PM	Entrevistas con beneficiários directos	Estudiantes de maestria	
	3:30 PM		Estudiantes de pregrado de Farmacia y Biologia	
	4:00 PM		Directivos CEBI, jefes de carrera de Farmacia y Biologia	
	4:30 PM	Visita al laboratório de Cultivo Celular	Investigadores	Laboratorio Cultivo Celular
23/01/2018	9:00 AM	Presentacion del proyecto P4	Todos los Miembros del Proyecto P4	Facultad de Ciencias Sociales, Humanas, Derecho y Construcciones
	9:30 AM	Entrevistas con beneficiarios directos	Alumnos de doctorado y maestria	

Día	Hora	Actividades	Participan	Lugar
	10:00 AM		Decanos, Vicedecanos, Jefes Dpto de la Facultad de Sociales, Humanidades, Derecho y Construcciones	
	11:00 AM	Entrevistas con beneficiarios indirectos	Escuela Primaria "Clodomira Acosta Ferrals" y Escuela Primaria "Nacho Marti"	Escuelas Primaria
	12.30 PM	ALMUERZO		
	2:00 PM	Entrevistas con beneficiarios indirectos	Archivo Provincial Santiago de Cuba	Archivo Provincial
	4.00 PM	Entrevistas con beneficiarios indirectos	Delegados del Poder Popular Municipio Santiago	Poder Popular
24/01/2018	9:00 AM	Presentación del proyecto P2	Todos los Miembros de Proyectos	Centro de Biofisica Medica
	9:30 AM	Visita al Hospital Clinico Juan Bruno Zayas (Beneficiario P2)	Miembros afectados	Hospital Juan Bruno Zayas
	9:45 AM	Reunion ViceDirectora Docente Hospital Clinico Juan Bruno Zayas (Beneficiario P2)	Vice Directora y otros directivos	
	9:15 AM	Visita Departamento de Imagenes Rx (Beneficiario P2)	Departamento de Rx	
	9:45 AM	Visita al laboratorio analisis de movimiento. Hospital Clinico Juan Bruno Zayas (Beneficiario P2)	Investigadores de Biofisica y del hospital	
	10:00 AM	Visita sala de VIH. Hospital Clinico Juan Bruno Zayas (Beneficiário P3)	Investigadores de P3	
	10:15 AM	Visita a Laboratório de Toxicologia (Beneficiário P3)	Directivos e investigadores	Laboratório de Toxicologia
	11:00 AM	Visita a Laboratório Labex (CIM) (Beneficiário P3)	Directivos e investigadores	Laboratório Labex
	12.30 PM	ALMUERZO		
	2:00 PM	Visita al Centro de Biofisica Medica (CBM)		Centro de Biofisica Medica
	2:00 PM	Visita al laboratorio de resonancia magnetica nuclear	Investigadores	
	2:30 PM	Entrevistas con beneficiarios directos	Doctorantes y estudiantes de pregrado	
	3:00 PM		Jefes de carrera de Física e Ingeniería Biomedica	
	3:15 PM	Visita Centro Procesamiento de Imagenes y Señales (CENPIS)	Directivos CENPIS	CENPIS
	3:15 PM	Reunión de trabajo	Programmea de doctorado y maestria	
	3:30 PM	Visita al laboratorio Centro Procesamiento de Imagenes y Señales (CENPIS)	Investigadores	
	4:30 PM	Visita Centro Nacional de Eletromagnetismo Aplicado (CNEA)	Investigadores	CNEA
	4:30 PM	Visita al laboratório de Sistemas Eletromagnéticos	Investigadores	

Día	Hora	Actividades	Participan	Lugar
25/01/2018	9:00 AM	Entrevista con la Rectora	Dra. Diana Sedal Yanes	Rectorado
	9.00 AM	Presentacion del proyecto P1	Todos los Miembros de Proyectos	CNEA
	9:30 AM	Entrevista con el Lider del Proyecto P1	Teresa Orbera	
	10:00 AM	Entrevista con directivos de UO y CNEA	Directivos del CNEA; J' Dpto de Biología, VDIP de FIQA y FCO	
	10.00 AM	Entrevista con Vicerrector de Relaciones Interinstitucionales	MSc. Juan Carlos Murgado	Vicerrectoria
	10:30 AM	Entrevistas con beneficiarios directos	Doctorantes, maestrantes, programmea doctoral	CNEA
	11:30 AM	Vista al laboratorio LECSA	Investigadores	
	12.30 PM	ALMUERZO		
	2:00 PM	Visita a beneficiarios indirectos	UMA, Instituto Nacional de Recursos Hidraulicos (INRH), Bioeco	INRH, Bioeco
	3.00 PM	Entrevista con Vicerrectora de Investigaciones y Posgrados	Dra. Rosa Maria Reyes Bravo	Vicerrectoria
26/01/2018	8:30 AM	Presentación del proyecto P5	Todos los Miembros del Proyecto	Centro de Estudios de Energia
	9:00 AM	Visita al laboratorio de bio combustible y biomasa	Investigadores	
	9:30 AM	Entrevistas con beneficiarios directos	Alumnos de Programmea de Maestría y Doctorado	
	10:00 AM	Entrevista con directivos de Facultades	Facultades de Ingeniería Mecánica y Química	
	10:30 AM	Reunion con beneficiarios indirectos	Empresa "Cuba Ron"	Empresa "Cuba Ron"
			Empresa "Azcuba"	Empresa "Azcuba"
	11.00 AM	Entrevista a Vicerrectora Docente	Dra. Maribel	Vicerrectoria
	12.30 PM	ALMUERZO		
	2:00 PM	Entrevista al Lider del Proyecto Transversal TP3	Jorge Herrera	Laboratorio CATFlag
	2:30 PM	Entrevista con Miembros del Proyecto	Miembros del Proyecto	
	3:00 PM	Entrevistas con beneficiarios directos	Estudiantes de 5 año de la carrera de Lengua Inglesa y adiestrados	
	3:30 PM	Entrevista con directivos de la Facultad	Decano Facultad de Lenguas Extranjeras y vice decanos, jefe de dpto	
	4:00 PM	Entrevistas con beneficiarios indirectos	Profesores de Ciencias Medicas e Inter-armas	
27/01/2018	8:30 AM	Presentación del proyecto Transversal TP1	Todos los Miembros del Proyecto TP1	Dirección de Informatización
	9:00 AM	Entrevista con los miembros de la Red UCLV	Miembros de la Red Nacional Informática	
	9:30 AM	Visita al Data Centre - UO	Investigadores	

Día	Hora	Actividades	Participan	Lugar
	10:00 AM	Visita a la Facultad de Ingeniería Eléctrica (FIE)	Afectados	FIE
	10:30 AM	Visita al CATFLAg	Afectados	Laboratorio CATFlag
	11:00 AM	Visita a la Biblioteca Central Universidad de Oriente	Afectados	Biblioteca Central UO
	12.30 PM	ALMUERZO		
	2:00 PM	Entrevista con directivos de Joven Club de Computación	Director Provincial y directivos	Dirección de los "Joven Club de Computación "
	2:30 PM	Visita a un Joven Club de Computación	Investigadores e Invitados	
	3:00 PM	Visita al Parque de diversiones	Investigadores e Invitados	Parque de los Sueños
	4.30 PM	Reunión Conjunta de Conclusiones parciales	Rectora, Vicerrectores, Coordinadores Locales, Lideres de Proyecto, invitados	Salón Proyecto VLIR
28/01/2018	Viaje a Universidad de Camaguey			

5.3. List of people interviewed and Focus Groups

MINISTRY OF HIGHER EDUCATION (MES)

Name	Position
José Ramón Saborido	Ministry of Higher Education
Martha del Carmen Mesa	Vice-Minister (MES)
Oberto Santín Cáceres	Vice-Minister (MES)
Maria Victoria Villavicencio Plasencia	Director (MES)
Raúl Hernández	Advisor (MES)
Odalys Alonso Leal	Technical Staff

UNIVERSIDAD DE ORIENTE (UO) - Board

Name	Position
Diana Sedal Yanes	Rector
Rosa Maria Reyes Bravo	Vice rector
Juan Carlos Garcia Naranjo	Vice rector

Name	Position	Project
Inaudis Álvarez Hubert	UO, Chemistry Department (TM)	P1
Yilan Fung Boix	UO, CNEA (TM)	P1
Albys Esther Ferrer Dubois	UO, CNEA (TM)	P1
José Carlos Rodríguez Tito	UO, Faculty of Chemical Engineering and Agronomy (TM)	P1
Rosa María Pérez Silva	UO, Natural and Exact Sciences Faculty (TM)	P1
Yadenis Ortega Díaz	UO, CNEA (TM)	P1
Abel Dorta Armaignac	UO, Department of Hydraulic Engineering (TM)	P1
Teresa Orberá	UO, Natural and Exact Sciences Faculty (TM, PL)	P1
Axel Campos Castro	BIOECO, stakeholder	P1
Indira Hernández Ferrer	BIOECO, stakeholder	P1
Juan Carlos Salazar Salinas	UO, Biology Department (stakeholder)	P1
Claudia de la Caridad Sanjuán Hernández	UO, Biology Department (stakeholder)	P1
Alejandro Catalá Jiménez	UO, Biology Department (stakeholder)	P1
Ibrahim Clavel	UO, Biology Department (stakeholder, Chief of Department)	P1
Irene González	BIOFABRICA (stakeholder)	P1

Name	Position	Project
Julio Brozar Alejo	Neurocirujano, Dpto docente, Hospital Clínico Quirúrgico Juan Bruno Zayas	P2
Osiel Gámez	Jefe del Servicio de Neurología Hospital Clínico Quirúrgico Juan Bruno Zayas	P2
Joaquín López	Jefe del Servicio de Neumología Hospital Clínico Quirúrgico Juan Bruno Zayas	P2
Tatiana Marañón	Coordinadora ensayos clínicos, Hospital Clínico Quirúrgico Juan Bruno Zayas	P2
Carlos Diaz Novo	Jefe del laboratorio de análisis de movimiento Hospital Clínico Quirúrgico Juan Bruno Zayas	P2
Manuel Lores Guevara	Director Científico Centro de Biofísica Médica	P2
Carlos Vázquez Seisdedos	Coordinador programmea de doctorado en Ingeniería Biomédica	P2
Rubén López Noa	Coordinador carrera Ingeniería Biomédica	P2
Pedro Muné Bandera	Jefe disciplina integradora departamento de Física	P2
Henry Blanco Lores	Coordinador proyecto Red Oriental de Imágenes Médicas	P2
Yamirka Alonso Geli	Estudiante de doctorado conjunto	P2
Yissel Rodriguez Aldana	Estudiante de doctorado conjunto	P2
Yulianela Mengana Torres	Graduada de Maestría en Física de la UO	P2
Fernando Fonseca Acosta	Jefe de proyecto Angiodin Móvil	P2
Joaquín Borges Monroig	Estudiante 5to año de ciencias de la computación	P2

Name	Position	Project
Dra.C. Arelis Ábalos Rodríguez (	Vicerrectora Primera en funciones. Decana Facultad Ciencias Naturales y Exactas)	P3
Dr.C. Ibrahim Clavel Hernández	(Decano en funciones Facultad Ciencias Naturales y Exactas y Jefe de Departamento de Biología)	P3
Dr.C. Adolfo Fernández García	Vice-decano de Investigaciones 2013-2017)	P3
Dra.C. Yolanda Shung Hung	Vice-decano de Investigaciones 2017-actual)	P3
MsC. Abdiel Jovier Capote	(Vice-decano Docente)	P3
MsC. Franklin Madrid Sotelo	Secretario General Docente, 2015-actualidad)	P3
MsC. Adrian Cascaret Daunis	(Jefe de Departamento de Química)	P3
Dr.C. Julio César Escalona Arranz	Jefe del Proyecto	P3
Dr.C. Gabriel LLauradó Maury	Administrador del Proyecto	P3

Name	Position	Project
Dr.C. Humberto J. Morris Quevedo	Profesor/Investigador	P3
MsC. Miladis I. Camacho Pozo	Doctorante	P3
MsC. Jesús García Díaz:	Doctorante	P3
MsC. Yamilé Heredia Díaz	Doctorante	P3
MsC. Clara A. Berenguer Rivas	Doctorante	P3
Dr.C. Manuel Serrat Díaz	Coordinador Del programmea de doctorado en Biotecnología	P3
Dra.C. Rosa C. Bermudez Savón	Coordinadora del Programmea de de Maestría en Biotecnología.	P3
Dr.C. Humberto J. Morris Quevedo	Coordinador programmea de Maestría em Servicios Farmacéuticos.	P3
Dra.C. Idelsy Chil Núñez	Coordinador de Carrera Farmacia	P3
MsC. Ania Cutiño	Coordinador de Carrera Biología	P3
MsC. Tania López Gonzáles	Coordinador de 4to año de Carrera Farmacia	P3
MsC. Lourdes Padró González	Coordinador de 3er año de Carrera Farmacia	P3
Lic. Andrea Alfonseca Ladrón de Guevara	Coordinador de 4to año de Carrera Biología	P3
Estudiantes de pregrado de Farmacia de 4to y 5to año	12 estudiantes	P3
Estudiantes de pregrado de Biología de 4to año	3 estudiantes	P3
Maestrantes egresados del programmea de Maestría en Servicios Farmacéuticos	4 Maestrantes	P3
Maestrantes egresados del programmea en Biotecnología	4 Maestrantes	P3
Maestrantes actuales del programmea en Biotecnología	2 Maestrantes	P3
Maestrantes actuales del programmea de Maestría en Servicios Farmacéuticos	3 Maestrantes	P3

Name	Position	Project
Dra. Margarita Hernández Garrido	Decana de Ciencias Sociales	P4

Name	Position	Project
Dra. Aimara Reyes	Vicedecana Facultad de Ciencias Sociales	P4
Dra. Tania García	Decana Facultad de Humanidades.	P4
Dra. María Teresa Muñoz Castilo	Vicedecana Facultad de Construcciones	P4
Dr. Freider Santana Lescaille	Director Departamento de calidad U.O. (Fac. Derecho).	P4
Elizabeth Luperón Bauzá	Estudiantes de Pregrado Psicología 3er Año	P4
Isabel Amador Pardios	Estudiantes de Pregrado Psicología3er Año	P4
Lianne Bruketa Jiménez	Estudiantes de Pregrado Psicología3er Año	P4
Barbara González	Estudiantes de Pregrado Psicología. 3er Año	P4
Sindy Carrión Pera	Estudiantes de Pregrado Psicología. 3er Año	P4
MsC. Liusa González Ruiz	Estudiantes maestría y Diplomas:	P4
Lic. Larisa Pérez rodriguez	Estudiantes maestría y Diplomas:	P4
Leticia Santiesteban Novo	Estudiantes maestría y Diplomas:	P4
Maciel Hernández González	Estudiantes maestría y Diplomas:	P4
MsC. Ligia Lavielle Pullés Fac. Humanidades	Estudiantes de Doctorado Conjunto del P4:	P4
MsC. Carlos Guillermo LLoga Sans. Fac. Humanidades	Estudiantes de Doctorado Conjunto del P4:	P4
MsC. Luis Enrique Bello Caballero. Fac. Construcciones	Estudiantes de Doctorado Conjunto del P4:	P4
MsC. Ernesto Guevara Fernández. Fac. Derecho	Estudiantes de Doctorado Conjunto del P4:	P4
MsC. Liuba Galbán Rodríguez. Fac. Derecho	Estudiantes de Doctorado Conjunto del P4:	P4
Dr. Hebert Perez Concepción. Subproyecto 1 P4	Investigadores P4:	P4
Dra. Milene Soto: Coordinadora Subproyecto 2 P4	Investigadores P4:	P4
Dra. Irina Vidot Martinez Subproyecto 3 P4	Investigadores P4:	P4
Dr. David Silveira Toledo Subproyecto 3 P4	Investigadores P4:	P4
Dr. Hebert Perez Concepción. Subproyecto 1 P4	Investigadores P4:	P4
Msc. Irina Vilariño Sanchez. Directora Escuela Clodomira Acosta Ferrales	Steakeholder. Escuela Clodomira Acosta Ferrales. Calle 8 entre 9 y 11 Vista Alegre.	P4
Lic. Efrain Gonzalez. Meto-	Steakeholder. Escuela Clodomira Acosta Ferrales. Calle	P4

Name	Position	Project
dólogo Escuela Clodomira Acosta Ferrales.	8 entre 9 y 11 Vista Alegre.	
Lic. Elaine Arzuaga. Directora Escuela Roberto Rodríguez	Steakeholder. Escuela Clodomira Acosta Ferrales. Calle 8 entre 9 y 11 Vista Alegre.	P4
Lic. Dany E. Boude. Maestro Escuela Roberto Rodríguez	Steakeholder. Escuela Clodomira Acosta Ferrales. Calle 8 entre 9 y 11 Vista Alegre.	P4
Lic. Milagros Villalón	Steakeholder. Directora Archivo Provincial	P4
Ernesto González	Steakeholder. **Archivo Provincial** Archivo Museo Emilio Bacardí.	P4
Lic Abel Marino	Steakeholder. Presidente Consejo Popular Distrito Abel Santamaría	P4
Lic. Jorge Bacó	Steakeholder. Steakeholder. Presidente Consejo Popular Distrito José Martí.	P4

Name	Postion	Project
Guillermo Ribeaux	Investigador. Centro Nacional de Electromagnetismo Aplicado	P5
Karina Silveira Martineaux	Steakeholder. Emp. Materias Primas)	P5
Jeamichel Puente Torres	Steakeholders. Centro Prov Electromedico	P5
Jorge Jadid Tamayo	FIE-LPhD	P5
Anibal Antonio Prieto	Steakeholders. ATAC	P5
Jorge Daniel Rivas Batlle	Steakeholders. ATAC	P5
Rolando Guillaume Flores	Steakeholders. ATAC	P5
Alber Martinez Camilo	G Cientifico. Estudiante 5to Ing. Quimica	P5
Wndy Lucia Duharte	G Cientifico. Estudiante 5to Ing. Quimica	P5
Dra Omaida Quesada Gonzalez	Investigadora FCNE	P5
Margarita Penedo Medina	Investigadora FIQA)	P5
Rodolfo Lopez Nadal	Decano FIMI	P5
Leonardo Broche Vazquez	Vicedecano FIMI	P5
Robertto Machado Garcia	JPHD FCNE,	P5
Harold Crespo Sariol	JPhD. FIQA,	P5
Thayset Mariño Peacok	LPhD, FIQA	P5

Name	Position	Project
MSc. Jose Cuza Freyre	Project Lider TP1	TP1
MSc. Lidice Romero	manager del TP1.	TP1
MSc. Robert Reina Valladares	team member del TP1 y beneficiario de un proyecto Close de Gap.	TP1
Lic. Eloy Oliveros Domínguez	Director de Informatización UO.	TP1
Dr. Fernando Artigas Fuentes	Coordinador Grupo HPC UO.	TP1
MSc. Jorge Hernández Venzant	Jefe Dpto. Redes UO	TP1
Dra. Miriam Roll	Jefa Dpto. Informatica UO	TP1
Dra. Silena Herold	Jefa Dpto. Ciencias de la Computación UO	TP1
MSc. José Puyes	Jefe Dpto. de Control Automático UO	TP1
MSc. Yamile González Turcal	Steakeholder. Directora JCC Santiago de Cuba, u otro especialista de los JCC	TP1
MSc. Berta Pallerols	profesora de Electrónica FITIB	TP1
Ing. Eduardo Diaz Conde	Administrador del HPC	TP1

Name	Position	Project
Dr. C. Pedro Muné Bandera	Project leader	TP2
Dra. C. Teresa Orbera Ratón	S3 member	TP2
MSc. María Angeles Alpizar	S3 (PhD student)	TP2
MSc. Yohandys Zulueta Leyva	S1 (PhD student)	TP2
DrC. Julio Capó Sánchez	S1	TP2
Msc. Alexey Cruz García	S1 (PhD student)	TP2
MSc. Julio Rojas Vargas	S2 (PhD student)	TP2
Lic. Héctor Livan Cruz	Master student	TP2
Dr. C Omaida Quesada	Professor PhD programme	TP2
Dr. C Pedro Antonio Mariño Castellanos	Professor PhD programme/University of Holguín	TP2
Mahelkis Montero Milán	Bachelor student	TP2
Eliezer Santiesteban Frutos	Bachelor student	TP2
MSc. Roberto Machado	PhD student (P5) S2	TP2

Name	Position	Project
Jorge Herrera Ochoa	Project Lider	TP3
Yoennis Díaz Moreno	Investigador	TP3
Clara Escalona Falcón	Investigador. JPhD	TP3
Diana Oliveros Domínguez	Investigador	TP3
Rosa Mary Serret Vázquez	Investigador	TP3
Lianne Herrera Gálvez	Investigador	TP3
Geisa Dávila Pérez	Investigador	TP3
Alicia Arango Monnar	Investigador	TP3
María Elena Álvarez López	Investigador	TP3
Alina Castillo Duharte	Investigador	TP3
Luis Enrique Bello	JPhD. P4	TP3

5.4. List of documents consulted

- Project proposals and project reports;
- Annual plans 2013, 2014, 2015, 2016, 2017 – all projects;
- Annual Reports;
- LFMs;
- Self-assessment reports;
- Cuba Strategy Document (VLIR, 2011);
- MES Strategic Planning 2017-2012;
- MES Strategic Planning for 2017;
- Strategic Planning docs from UO;
- Internal Evaluation docs from UO;
- Different documents from local stakeholders for Case Studies.

5.5. Online questionnaire – Individual Impact

VLIR - IUC @ Universidad de Oriente

Proyecto de Cooperación Institucional con la Universidad de Oriente

Cuestionario para participantes en acciones formativas

1. Género

- ◯ Hombre
- ◯ Mujer

2. Edad

3. Universidad o institución en la que trabaja

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4. ¿En qué tipo de acción formativa/estancia ha participado? (tome como referencia el más reciente)

5. ¿Donde tuvo lugar la formación/estancia?

6. ¿Podría describir brevemente los 3 aspectos más importantes que ha aprendido en la acción formativa/estancia?

1

7. ¿Ha sido la acción formativa/estancia relevante para su trabajo? En el caso de que fuera estudiante a tiempo complete, ¿fue la formación/estancia relevante para la obtención del título?

- ◯ Muy relevante
- ◯ Relevante
- ◯ Ni relevante ni no relevante
- ◯ Irrelevante
- ◯ Muy irrelevante

8. ¿Puede explicar porque el curso/estancia fue relevante o irrelevante?

9. En una escala de 0-10, ¿recomendaría la acción formativa/estancia a conocidos? (tome como referencia el más reciente)

10. ¿Ha aplicado los contenidos del curso/estancia en su trabajo o en su investigación?

- ◯ Si
- ◯ No

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11. ¿Podría explicar como aplicó los conocimientos aprendidos?

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12. ¿Qué cambios propone implementar para mejorar la acción formativa?

5.6. KRA Indicators by project

P1.

Key Result Areas	*Indicators (quantitative and full descriptive data)*	*Baseline value*	*Initial target value*	*Final total value (achieved)*	*Comment on the evolution (if any)*
Research Related Indicators					
KRA 1: Research	Articles in international peer reviewed journals	4	14	16 (2 joint)	7 joint in preparation
	Articles in national peer reviewed journals	0	4	6	
	Conference proceedings (full paper)	0	2	4	
	Conference abstracts	0	4	5	
	Chapters in books (based on peer review)	-	-	-	
	Books with international distribution (author or editor)	-	-	-	
	Working/technical papers/popularising literature/articles in national journals, electronic journals etc.	0	1	1(2 editions)	
	Conference contributions (posters, lectures)	0	2	13	
	Patents.	0	1	0	
	Other	0	0	4 (university awards)	
Capacity Related Indicators					
KRA 2. Teaching	Courses/training programmes developed	0	4	7	
	New or substantially updated curriculum	-	-	-	
	Textbooks development	-	-	-	
	Learning packages developed (distance learning, CD-rom etc.)	0	2	0	Virtual library
	Laboratory manuals	-	-	-	
	Excursion guides	-	-	-	
	Accreditation (labs, programmes etc)	-	-	-	
	Other	1	1 MSc	1 PhD	
				3 seminars	
KRA 4: Manage-	New institutional procedures /				

ment	policies				
	Lab or departmental management inputs				
	Systems development (e-management, software etc.)				
	Research protocols				
	Awareness, sensitisation campaigns etc.				
	Business plan				
	Other (methodological meetings)	2	-	4	
KRA 5: Human resources development	Bsc.				
	Msc.	0	-	2	
	Phd.	0	6	3	Two more defenses will take place in year 6, other at beginning of 2019.
	Pre-doc	0	0	1	
	Training in Belgium (technical, adm, …)	0	4	3	3 postdoc
	Other				
KRA 6: Infrastructure Management	Computer Rooms				
	Laboratories	0	1	1	
	Classrooms				
	Libraries				
	Other				
KRA 7: Mobilisation of additional resources/opportunities	Flemish travel grants				
	Flemish PhDs				
	Other PhDs				
	Spin off projects				
	other				
Extension Related Indicators					
KRA 3: Extension and outreach	Leaflets, flyers or posters for extension	0	0	5	4 leaflets, 1 poster
	Manuals or technical guides				
	Workshop or training modules package				
	Audio visual extension materials	0	-	1	
	Consultancy				
	Policy advice/papers				
	Other				

P2.

Key Result Areas	*Indicators (quantitative and full descriptive data)*	*Baseline value*	*Initial target value*	*Final total value (achieved)*	*Comment on the evolution (if any)*
Research Related Indicators					
KRA 1: Research	Articles in international peer reviewed journals	1	10	10	
	Articles in national peer reviewed journals	-	2	2	
	Conference proceedings (full paper)		6	13	
	Conference abstracts		6	7	
	Chapters in books (based on peer review)	-	-	-	
	Books with international distribution (author or editor)	-	-	-	
	Working/technical papers/popularising literature/articles in national journals, electronic journals etc.	-	-	-	
	Conference contributions (posters, lectures)	0	6	7	
	Patents.	0	3	2	
	Other				
Capacity Related Indicators					
KRA 2. Teaching	Courses/training programmes developed	0	6	21	
	New or substantially updated curriculum	-	-	-	
	Textbooks development	-	-	-	
	Learning packages developed (distance learning, CD-rom etc.)				
	Laboratory manuals				
	Excursion guides				
	Accreditation (labs, programmes etc)	-	-	1	
	Other				
KRA 4: Management	New institutional procedures / policies				
	Lab or departmental management inputs				
	Systems development (e-management, software etc.)	1	3	10	
	Research protocols				
	Awareness, sensitisation campaigns etc.				
	Business plan				

	Other				
KRA 5: Human resources development	Bsc.				
	Msc.	9	20	18	
	Phd.	9	16	16	
	Pre-doc				
	Training in Belgium (technical, adm, …)	0	4	4	
	Other (training delivered by the project)	0	17	17	
KRA 6: Infrastructure Management	Computer Rooms				
	Laboratories	0	2	2	
	Classrooms	0	1	1	
	Libraries				
	Other				
KRA 7: Mobilisation of additional resources/opportunities	Flemish travel grants	-	-	3	
	Flemish PhDs				
	Other PhDs				
	Spin off projects			2	
	other				
Extension Related Indicators					
KRA 3: Extension and outreach	Leaflets, flyers or posters for extension	-	-	2	
	Manuals or technical guides				
	Workshop or training modules package	-	-	4	
	Audio visual extension materials				
	Consultancy				
	Policy advice/papers				
	Other				

P3.

KeyResultAreas	*Indicators (quantitative and full descriptive data)*	*Baseline value*	*Initial target value*	*Finaltotalvalue (achieved)*	*Comment on the evolution (if any)*
Research Related Indicators					
KRA 1: Research	Articles in international peer reviewed journals	4	15	24	
	Articles in national peer reviewed journals	6	15	11	The abilities in English language and the novelty of the researches give priority to international peer reviewed journals
	Conference proceedings (full paper)	2	0	7	No programmed as Research Related indica-

					tor
	Conference abstracts	0	0	0	
	Chapters in books (based on peer review)	1	0	2	No programmed as Research Related indicator
	Books with international distribution (author or editor)	0	0	0	
	Working/technical papers/popularisingliterature/articles in nationaljournals, electronicjournals etc.	0	0	0	
	Conference contributions (posters, lectures)	15	30	64	
	Patents.	-	-	-	
	Other (Awards)	2	3	5	
CapacityRelated Indicators					
KRA 2. Teaching	Courses/training programmesdeveloped	-	6	18	
	New or substantially updated curriculum	-	2	3	
	Textbooks development	-	-	-	
	Learning packages developed (distance learning, CD-rom etc.)	-	-	-	
	Laboratorymanuals	-	-	-	
	Excursion guides	-	-	-	
	Accreditation (labs, programmesetc)	2	2	4	
	Other	-	-	-	
KRA 4: Management	New institutional procedures / policies	-	-	-	
	Lab or departmental management inputs	5	5	11	
	Systems development (e-management, software etc.)	-	-	-	
	Research protocols	-	-	1	
	Awareness, sensitisationcampaigns etc.	-	-	-	
	Business plan	-	-	-	
	Other				
KRA 5: Human resources development	Bsc.	6	15	29	
	Msc.	2	10	11	
	Phd.	4	6	6	
	Pre-doc	2	10	15	
	Training in Belgium (technical, adm, …)	-	4	6	
	Other	-	-	-	
KRA 6: Infrastructure Management	Computer Rooms	2	1	0	Due to the lack of a physical space, the computer lab was not created. They were distributed in different halls.
	Laboratories	4	2	2	
	Classrooms	-	-	-	
	Libraries	-	-	-	

	Other	33	39	28	The number of Lab equipments was diminished according the prices and new necessities.
KRA 7: Mobilisation of additional resources/opportunities	Flemishtravelgrants	-	8	8	
	FlemishPhDs	-	-	-	
	OtherPhDs	-	-	-	
	Spin off projects	5	5	11	
	Other				
Extension Related Indicators					
KRA 3: Extension andoutreach	Leaflets, flyers or posters for extension	-	-	1	A general brochure with the possible services in the two labs was created.
	Manuals or technical guides	-	-	1	Regarding to the use of the microplate reader.
	Workshop or training modules package	-	2	4	
	Audio visual extension materials	-	-	-	
	Consultancy	-	-	-	
	Policy advice/papers	-	-	-	
	Other	-	-	-	

P4.

Key Result Areas	*Indicators (quantitative and full descriptive data)*	*Baseline value*	*Initial target value*	*Final total value (achieved)*	*Comment on the evolution (if any)*
Research Related Indicators					
KRA 1: Research	Articles in international peer reviewed journals	10	10	48	
	Articles in national peer reviewed journals	14	14	16	
	Conference proceedings (full paper)	8	8	35	
	Conference abstracts				
	Chapters in books (based on peer review)	0	0	21	
	Books with international distribution (author or editor)	1	1	3	
	Working/technical papers/popularising literature/articles in national journals, electronic journals etc.	4	4	22	
	Conference contributions (posters, lectures)	30	30	214	
	Patents.				
	Other	12	12		

		75	12	531 1006	
Capacity Related Indicators					
KRA 2. Teaching	Courses/training programmes developed	2	2	2	
	New or substantially updated curriculum	1	1	1	
	Textbooks development				
	Learning packages developed (distance learning, CD-rom etc.)				
	Laboratory manuals				
	Excursion guides				
	Accreditation (labs, programmes etc)	2	2	2	
	Other	1	1	1	Interdisciplinary PhD programme on cultural heritage and development
KRA 4: Management	New institutional procedures / policies				
	Lab or departmental management inputs				
	Systems development (e-management, software etc.)				
	Research protocols				
	Awareness, sensitisation campaigns etc.	-	-	3	
	Business plan				
	Other				
KRA 5: Human resources development	Bsc.				
	Msc.	25	25	26	
	Phd.	6	6	1	
	Pre-doc	6	6		
	Training in Belgium (technical, adm, …)	7	7	11	
	Other				
KRA 6: Infrastructure Management	Computer Rooms	4	4	4	
	Laboratories				
	Classrooms				
	Libraries				
	Other				
KRA 7: Mobilisation of additional resources/opportunities	Flemish travel grants				
	Flemish PhDs				
	Other PhDs	5	5	5	
	Spin off projects				
	other			2	
Extension Related Indicators					
KRA 3: Extension and outreach	Leaflets, flyers or posters for extension	2	2	10	
	Manuals or technical guides				

	Workshop or training modules package	1	1	3	
	Audiovisual extension materials	2	2	27	
	Consultancy			2	
	Policy advice/papers				
	Other				

P5.

Key Result Areas	*Indicators (quantitative and full descriptive data)*	*Baseline value*	*Initial target value*	*Final total value (achieved)*	*Comment on the evolution (if any)*
Research Related Indicators					
KRA 1: Research	Articles in international peer reviewed journals	2	6	6*	
	Articles in national peer reviewed journals	5	5	11	
	Conference proceedings (full paper)	0	3	7	
	Conference abstracts				
	Chapters in books (based on peer review)	1	1	2	
	Books with international distribution (author or editor)				
	Working/technical papers/popularising literature/articles in national journals, electronic journals etc.	10	10	12	
	Conference contributions (posters, lectures)	2	2	10	
	Patents.	0	0	2	
	Other				
Capacity Related Indicators					
KRA 2. Teaching	Courses/training programmes developed	6	6	46	
	New or substantially updated curriculum	0	3	5	
	Textbooks development				
	Learning packages developed (distance learning, CD-rom etc.)				
	Laboratory manuals				
	Excursion guides				
	Accreditation (labs, programmes etc)				
	Other				
KRA 4: Management	New institutional procedures / policies				
	Lab or departmental management				

	inputs				
	Systems development (e-management, software etc.)				
	Research protocols	0	1	1	
	Awareness, sensitisation campaigns etc.				
	Business plan				
	Other				
KRA 5: Human resources development	Bsc.				
	Msc.	3	5	13	
	Phd.				
	Pre-doc	1	3	2	
	Training in Belgium (technical, adm, …)	0	3	4	
	Other				
KRA 6: Infrastructure Management	Computer Rooms			10	
	Laboratories	1	1	1	
	Classrooms				
	Libraries				
	Other				
KRA 7: Mobilisation of additional resources/opportunities	Flemish travel grants				
	Flemish PhDs				
	Other PhDs			1	
	Spin off projects				
	other				
Extension Related Indicators					
KRA 3: Extension and outreach	Leaflets, flyers or posters for extension				
	Manuals or technical guides				
	Workshop or training modules package	2	5	11	
	Audio visual extension materials				
	Consultancy				
	Policy advice/papers				
	Other				

TP1.

Key Result Areas	*Indicators (quantitative and full descriptive data)*	*Baseline value*	*Initial target value*	*Final total value (achieved)*	*Comment on the evolution (if any)*
Research Related Indicators					
KRA 1: Research	Articles in international peer reviewed journals				

	Articles in national peer reviewed journals				
	Conference proceedings (full paper)				
	Conference abstracts				
	Chapters in books (based on peer review)				
	Books with international distribution (author or editor)				
	Working/technical papers/popularising literature/articles in national journals, electronic journals etc.				
	Conference contributions (posters, lectures)				
	Patents.				
	Other				
Capacity Related Indicators					
KRA 2. Teaching	Courses/training programmes developed				
	New or substantially updated curriculum				
	Textbooks development				
	Learning packages developed (distance learning, CD-rom etc.)				
	Laboratory manuals				
	Excursion guides				
	Accreditation (labs, programmes etc)				
	Other				
KRA 4: Management	New institutional procedures / policies				
	Lab or departmental management inputs				
	Systems development (e-management, software etc.)				
	Research protocols				
	Awareness, sensitisation campaigns etc.				
	Business plan				
	Other				
KRA 5: Human resources development	Bsc.				
	Msc.	0	0	3	
	Phd.				
	Pre-doc				
	Training in Belgium (technical, adm, …)	0	15	21	Training were technical but very practice
	Other				

KRA 6: Infrastructure Management	Computer Rooms				
	Laboratories				
	Classrooms				
	Libraries				
	Other				
KRA 7: Mobilisation of additional re-sources/opportunities	Flemish travel grants				
	Flemish PhDs				
	Other PhDs				
	Spin off projects				
	other				
Extension Related Indicators					
KRA 3: Extension and outreach	Leaflets, flyers or posters for extension				
	Manuals or technical guides				
	Workshop or training modules package	2	4	4	With the participation of more than 35 people in each Workshop
	Audio visual extension materials				
	Consultancy				
	Policy advice/papers				
	Other				

TP2.

Key Result Areas	*Indicators (quantitative and full descriptive data)*	*Baseline value*	*Initial target value*	*Final total value (achieved)*	*Comment on the evolution (if any)*
Research Related Indicators					
KRA 1: Research	Articles in international peer re-viewed journals	8	12	12	This estimation was made peer year and considering the re-searchers who work in materials science
	Articles in national peer reviewed journals				
	Conference proceedings (full paper)				
	Conference abstracts				
	Chapters in books (based on peer review)				
	Books with international distribution (author or editor)				

	Working/technical papers/popularising literature/articles in national journals, electronic journals etc.				
	Conference contributions (posters, lectures)	5	8	8	This estimation was made peer year and considering the researchers who work in materials science
	Patents.				
	Other				
Capacity Related Indicators					
KRA 2. Teaching	Courses/training programmes developed	-	-	10	These courses are mainly for technology transfer. One course was on electron microscopy. In this courses participated people from different Faculties of UO and other institutions.
	New or substantially updated curriculum	-	-	2	A new doctoral programme of Basic Sciences for the Universities from the Eastern region of Cuba was presented to the Scientific Committee of the University. One elective course on IP was included in the curriculum of the Physics major.
	Textbooks development				
	Learning packages developed (distance learning, CD-rom etc.)				
	Laboratory manuals	-	3	2	The elaboration of the manuals will be finished in 2018
	Excursion guides				
	Acreditation (labs, programmes etc)			2	In the acreditation of the Programmes: Physics (2015) and Chemistry (2017), the project TP2 play and important role. Both programmes obtained the higest category.
	Other				
KRA 4: Management	New institutional procedures / policies	-	3	3	The project has contributed to the Policies of integration of sciences, of technology transfer and the use of the new labs.
	Lab or departmental management inputs				
	Systems development (e-management, software etc.)				
	Research protocols				
	Awareness, sensitisation campaigns etc.				
	Business plan				

	Other				
KRA 5: Human resources development	Bsc.				
	Msc.				
	Phd.	-	3	1	One PhD made the private defence in 2017. The other two should defend in 2018.
	Pre-doc				
	Training in Belgium (technical, adm,)				
	Other				
KRA 6: Infrastructure Management	Computer Rooms				
	Laboratories	-	3	3	The new Labs increase the possibilities of education and research at UO.
	Classrooms	-	-	1	A new classroom was parcially supported by the project in the Lab of Physical Characterisation.
	Libraries				
	Other				
KRA 7: Mobilisation of additional resources/opportunities	Flemish travel grants				
	Flemish PhDs				
	Other PhDs				
	Spin off projects				
	other				
Extension Related Indicators					
KRA 3: Extension and outreach	Leaflets, flyers or posters for extension				
	Manuals or technical guides				
	Workshop or training modules package	-	-	2	Two workshops for technology transfer were carried out in 2015 and 2017 with the entrepreneurial sector.
	Audio visual extension materials				
	Consultancy				
	Policy advice/papers				
	Other				

TP3

Key Result Areas	*Indicators (quantitative and full descriptive data)*	*Baseline value*	*Initial target value*	*Final total value (achieved)*	*Comment on the evolution (if any)*
Research Related Indicators					

KRA 1: Research	Articles in international peer reviewed journals			3	
	Articles in national peer reviewed journals			10	
	Conference proceedings (full paper)				
	Conference abstracts				
	Chapters in books (based on peer review)				
	Books with international distribution (author or editor)				
	Working/technical papers/popularising literature/articles in national journals, electronic journals etc.				
	Conference contributions (posters, lectures)			8	
	Patents.				
	Other				
Capacity Related Indicators					
KRA 2. Teaching	Courses/training programmes developed				
	New or substantially updated curriculum				
	Textbooks development				
	Learning packages developed (distance learning, CD-rom etc.)				
	Laboratory manuals				
	Excursion guides				
	Accreditation (labs, programmes etc)				
	Other				
KRA 4: Management	New institutional procedures / policies				
	Lab or departmental management inputs				
	Systems development (e-management, software etc.)				
	Research protocols				
	Awareness, sensitisation campaigns etc.				
	Business plan				
	Other				
KRA 5: Human resources development	Bsc.				
	Msc.	3		7	During phase 1, 9 team members got their Master´s degree, but two of them left the group.
	Phd.				
	Pre-doc				
	Training in Belgium (technical, adm, …)				
	Other				
KRA 6: Infrastruc-	Computer Rooms	0		3	

ture Management	Laboratories				
	Classrooms				
	Libraries				
	Other				
KRA 7: Mobilisation of additional resources/opportunities	Flemish travel grants				
	Flemish PhDs				
	Other PhDs				
	Spin off projects				
	other				
Extension Related Indicators					
KRA 3: Extension and outreach	Leaflets, flyers or posters for extension				
	Manuals or technical guides				
	Workshop or training modules package				
	Audio visual extension materials				
	Consultancy				
	Policy advice/papers				
	Other				

ABOUT VLIR-UOS

VLIR-UOS supports partnerships between universities and university colleges in Flanders and the South that seek innovative responses to global and local challenges.

We fund cooperation projects between professors, researchers and teachers. In addition, we award scholarships to students and professionals in Flanders and the South. Lastly, we contribute to strengthening higher education in the South and internationalising higher education in Flanders.

VLIR-UOS is part of the Flemish Interuniversity Council and receives funding from the Belgian Development Cooperation.

More information: www.vliruos.be

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Management response to mid-term evaluation

Universidad de Oriente promotes a sustainable development in the eastern region of Cuba - 2018

Programme level

General appreciation

The midterm evaluation report was discussed at programme and project level, involving both academic staff and all team members. Discussions at the programme level were focused on remarks and how recommendations would be tackled. At university level, discussions were held with the Rector, the staff of the vice-rectorate of Research, Postgraduate Education and Innovation, as well as Deans and/or Deputy-deans of faculties directly beneficiated by the programme. Moreover, the Flemish and local co-ordinator discussed the recommendations with the authorities of the Ministry of Higher Education. The report was also discussed in the 1st plenary session of the formulation mission with the Flemish counterpart, VLIR-UOS authorities, Cuban team members, University scientific board, Deans and external stakeholders.

In general, all stakeholders agree with the different recommendations formulated by the evaluators, and the formulation of the 2nd phase was organised with focus on the different recommendations.

The formulation of a new transversal project (Project 6: Institution-wide instruments for high performance research, innovation and technology transfer) is a very specific and clear answer to the different recommendations resulting from the midterm evaluation. It not only includes explicitly activities on the promotion of English proficiency and the ICT-related activities, but has also a focus on multi-disciplinary research and transfer of knowledge and technology. By means of its content, it will have impact on the whole university, and by means of its formulation as a transversal project within the IUC-programme, the other projects will be able to pick up and integrate its intermediate results immediately in their own outcomes.

The university authorities (rector and vice-rectors) participated actively in the formulation of the phase 2 of this programme, expressing their interest and commitment to the programme. This is a positive beginning as a response to the third Operative level recommendation: Increase involvement of the UO hierarchy.

Follow-up on recommendations

Recommendation 1:	Strategic level: improve financial sustainability
	Create conditions for successful technology transfer

Management Response (Agree, partially agree, disagree):	UO (Agree)
If recommendation is rejected or partially accepted, report reasons:	

Actions Planned /Actions taken + timeframe (action finalised)	**Implementation stage** (not started, underway, completed
A Transversal Project: “Institution-wide instruments for high performance research, innovation and technology transfer” has been developed as the MAIN transversal project for Phase II	Underway (Phase II Partner Programme to be approved)
Promote of the Knowledge and Technology Transfer Office within the university community and external stakeholder by means of a variety of activities	Underway, not necessarily dependent on the IUC-programme

	Create conditions for capturing international students
Management Response (Agree, partially agree, disagree):	UO (Agree)
If recommendation is rejected or partially accepted, report reasons:	

Actions Planned /Actions taken + timeframe (action finalised)	**Implementation stage** (not started, underway, completed
Elaboration of a strategy for recruitment of international students: this would be the first step to take for responding properly to this recommendation. This could start from a commitment of the university authorities, but the participation of the Ministry of Higher Education, setting up the general guidelines would guarantee a real long-term impact.	Not started

	Promote good mix of applied research
Management Response (Agree, partially agree, disagree):	UO (Agree)
If recommendation is rejected or partially accepted, report reasons:	

Actions Planned /Actions taken + timeframe (action finalised)	**Implementation stage** (not started, underway, completed
All projects within Phase-II have been targeted towards applied research involving socio and economic stakeholders to develop innovative solutions corresponding to real societal, industrial and environmental needs and requirements. Moreover, to reinforce innovative applied research we planned in the Transversal project : “Institution-wide instruments for high performance research, innovation and technology transfer” two calls for supporting Prove of Concepts ideas from the university community not involved in the IUC programme.	Underway (Phase II Partner Programme to be approved)

	Boost participation in research funding calls
Management Response (Agree, partially agree, disagree):	UO and Flemish partners (Agree)
If recommendation is rejected or partially accepted, report reasons:	

Actions Planned /Actions taken + timeframe (action finalised)	**Implementation stage** (not started, underway, completed
UO staff members did take part on the “theory of Change” trainings organised by the Vice-rector of Research & Postgraduate Study and by VLIR for the formulation mission. Several initiatives started for writing VLIR TEAM and Joint Projects. Two of them, supported by the Flemish partners of the programme, have been submitted. This experience of training on project writing will continue under the Transversal Project “Institution-wide instruments for high performance research, innovation and technology transfer”. The vice-rector of Research & Postgraduate Studies supported by the IUC Programme team members are reviewing the non-submitted projects to the last VLIR call as potential projects for the upcoming call of the EU Erasmus Plus Capacity Building.	Underway (Phase II Partner Programme to be approved)

Recommendation 2:	Operative level
	Encourage an accountability culture
Management Response (Agree, partially agree, disagree):	UO (Agree)
If recommendation is rejected or partially accepted, report reasons:	

Actions Planned /Actions taken + timeframe (action finalised)	**Implementation stage** (not started, underway, completed
Quality assurance is included in all the projects within the IUC-programme, by means of a set of valid indicators and feedback of final stakeholders. This will be followed up on a regular basis by LC, LM, and PLS as well as during the meetings with University Board.	Not started.

	Improve PhD process
Management Response (Agree, partially agree, disagree):	UO and Flemish partners (Agree)
If recommendation is rejected or partially accepted, report reasons:	

Actions Planned /Actions taken + timeframe (action finalised)	**Implementation stage** (not started, underway, completed
One of the activities of the Transversal Project: "Institution-wide instruments for high performance research, innovation and technology transfer" will be to open a call for the recruitment of Joint PhDs and Local PhDs supported by the Programme. Topics will be defined by each project involving Cuban & Flemish partners and selections committees will be organised within each project. The other activities of the Transversal Project will be to organise a Doctoral Training Programme to support the ongoing PhD programmes by providing a curriculum of basic research training courses, basic ICT training courses, basic Technology Transfer training courses, and English training.	Underway (Phase II Partner Programme to be approved)

	Increase involvement of the UO hierarchy
Management Response (Agree, partially agree, disagree):	UO (partially agree)
If recommendation is rejected or partially accepted, report reasons:	All initiatives of the programme are institutionalized. PSU is belonging to at the vice-rectorate of Research, Postgraduate Education and Innovation (approved in the new organigram of the University, Jan 2017). The Director of UO-International Mobility Office is liaison between the PSU and university authorities and participates in all the Local Steering Committee Meetings.

Actions Planned /Actions taken + timeframe (action finalised)	**Implementation stage** (not started, underway, completed
Authorities and Boards at university and faculty level are briefed by the IUC-management team and the local Project Leaders on a regular basis. Involvement of representatives from the different university boards are part of the Local Steering Committee as well as participating to the Joint Steering Committee (See Management Manual)	Underway

	Promote English proficiency of participants
Management Response (Agree, partially agree, disagree):	UO (Agree)
If recommendation is rejected or partially accepted, report reasons:	

Actions Planned /Actions taken + timeframe (action finalised)	**Implementation stage** (not started, underway, completed

Th full integration of CATFLAg and its team within the Faculty of Language has been initiated. English training will be provided within the activities of the Transversal project. Moreover, it has been decided that Joint PhD students for Phase II should have: Level III-English proficiency (certified by CATFLAg) and TOEFL (level B2) one year before the defence.	Underway
	Rethink purchase/ procurement process
Management Response (Agree, partially agree, disagree):	UO (Agree)
If recommendation is rejected or partially accepted, report reasons:	
Actions Planned /Actions taken + timeframe (action finalised)	**Implementation stage** (not started, underway, completed
The purchase process as defined by MES has been modified with the introduction of the new service CONSUMIMPORT. The situation is not clear yet in terms of regulations. However, will continue seeking for alternatives e.g. purchase via recognized Cuban Research Centres, such as CNEURO and BIOCUBA. Internally (within the programme) purchase planning will be made two years in advance to reduce the delay in import.	Not started
	Intensify the interaction with industry
Management Response (Agree, partially agree, disagree):	UO (Agree)
If recommendation is rejected or partially accepted, report reasons:	
Actions Planned /Actions taken + timeframe (action finalised)	**Implementation stage** (not started, underway, completed
The Technology Transfer and Commercialization office reinforced its communication strategy towards main stakeholders. Within the Transversal Project we planned several activities towards stakeholders such as organisation of visits to the UO laboratories, as well as topical workshops for presenting possible services, equipment and research results. In a first step we are targeting the following stakeholders: Cuba Ron and run manufacture industry of AZCUBA, Medical Device Industry (RETOMED), Laboratory of Experiments Biomodels (LABEX-CIM) and Centre of Experimental Toxicology (TOXIMED) (June – December, 2018)	Not started

Project 1: Sustainable risk management plan for biodiversity and food production in the eastern of Cuba

Follow-up on recommendations

Recommendation 1:	Create conditions for successful technology transfer
Management Response (Agree, partially agree, disagree)**:**	Agree
If recommendation is rejected or partially accepted, report reasons:	
Actions Planned /Actions taken + timeframe (action finalised)	**Implementation stage** (not started, underway, completed
New and existing technologies are proposed to stakeholders and they are involved at the beginning of phase 2. Agreements between already identified stakeholders and the University of Oriente and the partners within this proposal are foreseen to be finalised by year 8 of project.	Not started

Via sounding boards of stakeholders, new opportunities for collaboration are explored throughout the entire period of the project and beyond to achieve sustainability.	Not started

Recommendation 3:	Promote a good mix of applied research
Management Response (Agree, partially agree, disagree)**:**	Agree
If recommendation is rejected or partially accepted, report reasons:	
Actions Planned /Actions taken + timeframe (action finalised)	**Implementation stage** (not started, underway, completed
New PhD studies linked to innovative research are developed, more specifically 4 new Joint PhDs are promoted and supported and at least 3 Local PhDs. Completion is foreseen in year 10 of the project.	Underway

Recommendation 6:	Improve PhD process
Management Response (Agree, partially agree, disagree)**:**	Agree
If recommendation is rejected or partially accepted, report reasons:	
Actions Planned /Actions taken + timeframe (action finalised)	**Implementation stage** (not started, underway, completed
A call is organised to present PhD proposals in which new themes of the current research are included. Completion is foreseen in year 7 of the project.	Not started

Project 2: Biomedical technologies and services for improv-ing the medical assistance in the eastern region of Cuba.

Follow-up on recommendations

Recommendation 1:	**Improve financial sustainability**
Management Response (Agree, partially agree, disagree)**:**	Agree
If recommendation is rejected or partially accepted, report reasons:	
Actions Planned /Actions taken + timeframe (action finalised)	**Implementation stage** (not started, underway, completed
Accreditation of the laboratories created by the project in Phase 1	Not started
Promotion for international students of the courses organized inside the project with the support of the infrastructure already created in phase 1	underway
To make a better use of the possibilities already created by the research centres of UO	underway

Project 3: Natural Products and Pharmaceutical Services to improve the patient quality of life in Eastern Cuban Hospital´s

Follow-up on recommendations

Recommendation 1:	Create conditions for successful technology transfer
Management Response (Agree, partially agree, disagree)**:**	agree
If recommendation is rejected or partially accepted, report reasons:	
Actions Planned /Actions taken + timeframe (action finalised)	**Implementation stage** (not started, underway, completed
Creation of a brochure of services attracting customers (Nov. 2017)	Completed
Exhibition of the products developed in the Exposition associated to the Higher Education International Congress“Universidad 2018” (February 12 – 16, 2018).	Completed
Design and validation of new “*in vitro*” protocols for different pharmacological activities	Underway
Association with other actors to offer a folder with broader services	Underway
Recommendation 2	Create conditions for capturing international students
Management Response (Agree, partially agree, disagree)**:**	Agree
If recommendation is rejected or partially accepted, report reasons:	
Actions Planned /Actions taken + timeframe (action finalised)	**Implementation stage** (not started, underway, completed
Accreditation of the postgraduate master programs in Pharmaceutical Sciences (May, 2017) and Biotechnology (Nov. 2017)	Completed
Submission of a new doctoral program in Biotechnology (Oct. 2017)	Completed
Updating the material in the bachelor programs and upgrading the lab infrastructure	Underway
Recommendation 3:	Promote good mix of applied research
Management Response (Agree, partially agree, disagree)**:**	Agree
If recommendation is rejected or partially accepted, report reasons:	
Actions Planned /Actions taken + timeframe (action finalised)	**Implementation stage** (not started, underway, completed
Project proposal for second phase with clear interaction with other projects like P1 and P2 in phase II formulation mission	Underway
Association with the different stakeholders in proposal for phase II	Underway
Recommendation 4:	Boost participation in research funding calls

Management Response (Agree, partially agree, disagree)**:**	Agree
If recommendation is rejected or partially accepted, report reasons:	

Actions Planned /Actions taken + timeframe (action finalised)	**Implementation stage** (not started, underway, completed
A South initiative acting as co-promotor with the IPK institute as promotor was submitted (17, May, 2018)	Completed

Recommendation 5:	Improve PhD process
Management Response (Agree, partially agree, disagree)**:**	Agree
If recommendation is rejected or partially accepted, report reasons:	

Actions Planned /Actions taken + timeframe (action finalised)	**Implementation stage** (not started, underway, completed
Direct contact with the President of the National Scientific Degree Committee in Health Sciences and in Biological Sciences as main topics in which the students will present their results (March, 2018 and Jan. 2018 respectively).	Completed
Open calls for PhD students based on research topics will be done by means of the new created Doctoral School.	Underway

Recommendation 6:	Promote English proficiency of participants
Management Response (Agree, partially agree, disagree)**:**	Agree
If recommendation is rejected or partially accepted, report reasons:	

Actions Planned /Actions taken + timeframe (action finalised)	**Implementation stage** (not started, underway, completed
Joint PhD students for Phase II should have: Level III-English proficiency (certified by CATFLAg) and TOEFL (level B2) one year before the defense.	Underway

Project 4: Safeguards of the cultural heritage. Tools and practices for its integrated management in Santiago de Cuba and the Eastern Region of Cuba.

Follow-up on recommendations

Recommendation 6:	Improve PhD Process
Management Response (Agree, partially agree, disagree)**:**	**Universidad de Oriente:** Agree.
If recommendation is rejected or partially accepted, report reasons:	

Actions Planned /Actions taken + timeframe (action finalised)	**Implementation stage** (not started, underway, completed

Negotiation with central University management and Faculty management on reducing the teaching load for PhDs	Underway
Signing of JPhds commitments, including reduction of teaching load	Not started
Control of the process by the scientific commissions of the Faculties	Not started

Recommendation 8:	Promote English Proficiency of participants
Management Response (Agree, partially agree, disagree)**:**	**TP3/P4:** Partially agree
If recommendation is rejected or partially accepted, report reasons:	Full implementation would be not feasible considering the current professional load of both the researchers and the language teachers.

Actions Planned /Actions taken + timeframe (action finalised)	**Implementation stage** (not started, underway, completed
Negotiation with Language Center on designing courses to measure, more responding to the precise needs of the researchers	Underway

Project 5: Obtaining, characterization and production of new materials and technologies for industrial systems

Follow-up on recommendations

Recommendation 1:	Promote English Proficiency of Participants
Management Response (Agree, partially agree, disagree)**:**	agree
If recommendation is rejected or partially accepted, report reasons:	

Actions Planned /Actions taken + timeframe (action finalised)	**Implementation stage** (not started, underway, completed
Strengthen the English JPhD training (speaking and writing) before stays in Belgium. TOEFL test one year before the private defence.	underway

Recommendation 2:	Create conditions for successful technology transfer
Management Response (Agree, partially agree, disagree)**:**	agree
If recommendation is rejected or partially accepted, report reasons:	

Actions Planned /Actions taken + timeframe (action finalised)	**Implementation stage** (not started, underway, completed
Contractual agreements to the implementation and transference of the results to the stakeholders will be prepared in advance before starting with the research program.	underway

Recommendation 3:	Improve PhD process	
Management Response (Agree, partially agree, disagree)**:**	agree	
If recommendation is rejected or partially accepted, report reasons:		
Actions Planned /Actions taken + timeframe (action finalised)		**Implementation stage** (not started, underway, completed
New rules for JPhD defences in Cuba will be implemented by the CNGC and the Higher-education ministry in order to accelerate the requested legal process		completed

Transversal Project : Institution-wide instruments for high performance re-search, innovation and technology transfer

Follow-up on recommendations

This project was formulated in the second phase, as a result of the midterm evaluation. As indicated in the beginning of this document (programme level), it covers various of the recommendations formulated