Mid-term Evaluation of Network University Cooperation in Cuba, coordinated by UCLV (Cuba)

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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
CIM/B	Molecular Immunology Center (BioCubaFarma)
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	Hasselt University
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 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 to the different activities of the project.

Thanks to the Ministry of Higher Education of Cuba (MES), the Direction Boards of UCLV, UPR, UCI, UHo and UC. Special thanks to the Network UCLV Coordination Team for their great support during the mission.

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 for its structure.

EXECUTIVE SUMMARY

Main conclusions

Strategic Level

Programme design vs. Cuban higher education system

The long-term cooperation schemes proposed by the VLIR-UOS programmes fits well in the centralised Cuban higher education system. The Cuban Ministry of Higher Education (MES) fully supports the development of a programme in which 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. 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 is having 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 the VLIR-UOS staff.

Moreover, the programme matched with the ICT national development policy. This fact also facilitated the cooperation with several governmental bodies, providing a closer contact with the key Cuban stakeholders in the area.

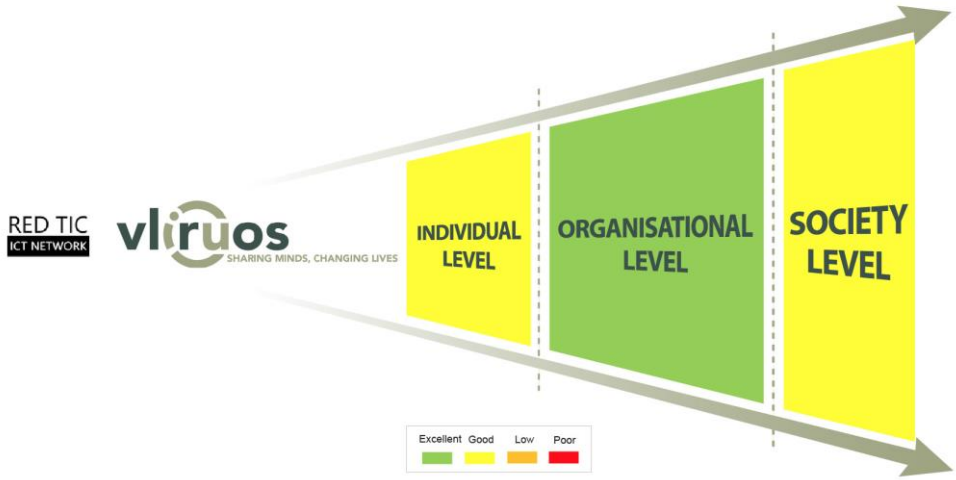
The Network University Cooperation (NETWORK) programme coordinated by Universidad Central "Marta Abreu" de las Villas (UCLV) is also taking advantage of the experience acquired before with an IUC Programme (UCLV Institutional University Cooperation Programme, 2003 – 2013).

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 of the Republic of Cuba.

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



The Network Programme coordinated by UCLV 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 of time, 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.

IMPACT / Individual level

Impact of the Network programme 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 their universities of different participants in the programme. However, Cuban universities of the programme did not get rid of the general trend in the country with regards government professionals moving to the private sector. Cases are more frequent in those universities working on topics with high demand from companies (computer programmers / UCLV). Evaluators did not identify clear policies promoting 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 five universities participating in the programme: Universidad Central “Marta Abreu” de las Villas (UCLV), Universidad de las Ciencias Informáticas (UCI), Universidad de Pinar del Río “Hermanos Saíz Montes

de Oca" (UPR), Universidad de Holguín (UHo) and Universidad de Camagüey "Ignacio Agramonte Loynaz" (UC).

The impact of the project in each institution is related with the fact that **ownership** of the programme is very high. Key stakeholders (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 new academic offers, ICT infrastructure or new policies.

IMPACT / Societal level

Impact at societal level is **HIGH** and has a 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 university headquarters to extend their influence with municipalities and regional actors. The activities developed in the framework of the projects 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 enterprises, schools and other governmental bodies. In 2.4, examples of impact in local enterprises, hospitals or schools may be found.

Operative Level

Experienced and relevant participants

Cuban participants, especially UCLV, are taking advantage of **previous experiences of cooperation** (UCLV IUC, 2002-13). The rest of the universities also had some interesting projects in the past, which provided a good background for the VLIR-UOS initiative. The lessons learned there have been applied to the current project at different levels (procurement, networking, etc.).

The average age of participants at the Network programme is less than 40 (estimation), with gender balanced and high academic profile (around 50% of PhDs), which clearly will contribute to the **sustainability** of the activities. 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 two general issues that have provoked management and communication problems in the first phase. The first issue was the **change of staff**, which usually provoked delays in the activities and affected some deliverables. The second issue has been the internal policies of **staff selection for training**, which are sometimes difficult to understand for Flemish partners.

Network functioning and potential overlapping with the UO IUC programme

The Network is clearly working as a coordinated team, taking advantage of the strengths of each member and minimising their weaknesses via joint efforts. Synergies and complementary work have been considered since the beginning of the project.

Besides that, there is no overlap with the UO programme, but the opposite. Team work provided several benefits for both initiatives, and the communication and transparency are very high at project management level.

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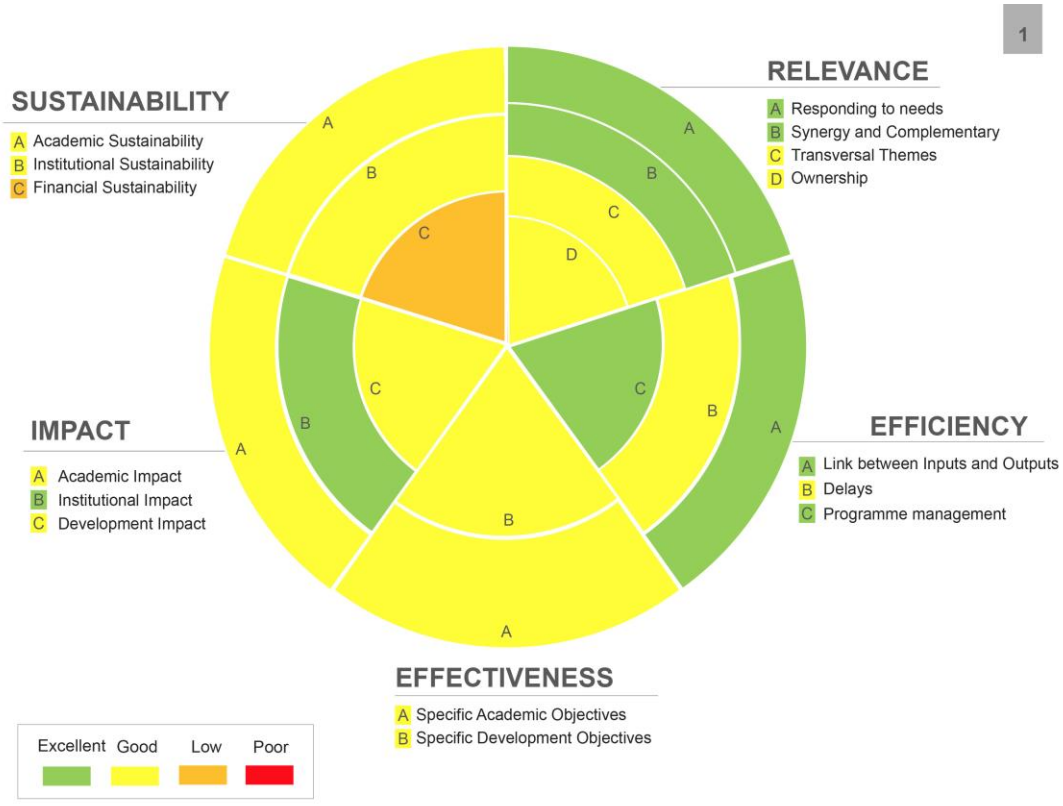
Summary of Scoring by Criteria (Programme Level)



Relevance

1.1. Responding to needs Score**: Excellent**	- ICT is a priority for the Cuban government and for Cuban Higher Education Institutions. - The Network has responded with different developments (ABCD, DSpace, English learning) that have been taken up to national policies.
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: **Good**	- Evaluators may confirm high ownership, mainly because of the new academic programmes, new policies and participation of crucial stakeholders (as MES).

Efficiency

2.1. Link between Inputs and Outputs Score: **Excellent**	- Assessment of financial resources and corresponding activities show high efficiency. - Financial management, also taking into account 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, UCLV managed to find solutions. - Changes in staff affected some projects, although remedial actions worked quite well.
2.3. Programme Management Score: Excellent	- Management and organisational structures worked properly during phase 1, based on the experience acquired in the previous project (UCLV IUC). - Fluid communication and transparency were of key importance for success.

Effectiveness

3.1. Specific Academic Objectives Score: **Good**	- Both specific objectives have been achieved. - The improvement of the quality of PhD formation is a full reality and the support via educational and information services for Cuban universities is an outstanding result.
3.2. Specific Development Objectives Score: **Good**	- The Network programme has increased the linkages with Industry and other relevant stakeholders. - See case studies for examples of impact at societal level (2.4).

Impact

4.1. Academic Impact Score: **Good**	- The academic impact of the Network programme is extensive. - The organisation of 2 Doctoral Schools (with high reputation at regional level) or the publication or articles in peer reviewed journals contributed to achieving the academic objectives of the Network.
4.2. Institutional Impact Score: **Excellent**	- Institutional impact is considerable, for instance, via the enhancement of network facilities and the increase of bandwidth. ICT offices have completely changed the approach with regards to ICT services. - The Network progress has influenced national policies in several aspects (ABCD/library system, DSpace/institutional repository, English learning, etc.), having a strong impact at institutional and national level.
4.3. Development Impact Score: **Good**	- There are some good examples of development impact at different areas: ICT, education, 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 academic level. - New academic offer and research schemes have been put in place.
5.2. Institutional Sustainability Score: **Good**	- Decision-making structures are in place, and that there is a strong commitment by the participant universities in order to guarantee institutional sustainability of the results achieved. - Each university 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 Cuban universities 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 new culture for technology transfer and fundraising should bring incentives which may contribute to the retention of staff.

Lessons Learned

Communication & Cooperation

- The previous relationships between research groups from different partner universities have been essential for a successful cooperation;
- Stability of focal points facilitated communication and decision-making processes in the project, which is a crucial issue in the Cuban context.
- Close relationship and cooperation established with Flemish partners (Ghent University) contributed to the achievement of donations, which saved resources to the programme and increased the impact.

Planning

- KRAs, LFM and specific objectives have not been always aligned, which in the end, provoked problems in monitoring and reporting. For instance, KRAs are not project-specific, not considering the clear differences of projects;
- Concentrating many responsibilities or leadership in the development of systems in the same partner university is a risk that should be avoided. Balance should be promoted.

ICT-specific

- Some barriers remain between developers and system administrators that delay the successful deployment of developed applications, although DevOps techniques are starting to be assimilated and applied.

Recommendations

R.1 Strategic Level: Improve Financial Sustainability

Recommendations to the Cuban partners

Create conditions for successful technology transfer

The Network is performing well with regards to academic and research activities. Transferring / commercialising Technology is a quite new activity for Cuban universities, although there are some relevant examples in the higher education sector (even inside the Network, e.g. UCI) as well. With regards to 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, Universities should also respond by promoting **Technology Transfer** Offices (TTOs, or similar bodies), 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 (UHA, CUJAE, BioCubaFarma), and benchmark TT practices to get inspiration from actors working in the same regulatory framework.

Create conditions for capturing international students / Develop ad-hoc courses for Industry

Every year, participant universities are increasing the number of **international students** enrolling in their different programmes. This is an interesting source of funding for the universities that have not been properly exploited until now because of different reasons: 1) No marketing or business plan to attract international students per programme exists; 2) Tailored 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.

At the same time, there are already some interesting cooperation activities with the industry (e.g. ETECSA) with regards to **ad-hoc courses** on ICT topics. This offer should be also organised and marketed to contribute to the sustainability of the actions.

Promote a good mix of applied research

Related to 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 transfers and the sustainability of activities. There are some 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).

Boost participation in research funding calls

Some of the Network 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 increasing the opportunities of those researchers who have interesting scientific results but limited experience in those kinds of calls.

R.2 Operative Level

Recommendation to the Cuban partners

Next steps: operational work plan

After a successful first phase, the second phase should be focused on the integration of the different data silos and the creation of services in the platforms based on the global network data. Some examples of **services** could be research management and evaluation tools for research, education and library, technology offer catalogue, etc. Services related to technology offer and relationship with industry stakeholders should be prioritised in order to contribute to the sustainability of the actions.

Encourage an accountability culture / Mitigate risks of changes of staff

During the evaluation process, evaluators have been working with the numerous indicators established in the LFMs and the work plan. Evaluators also 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. Thus, we would like to encourage universities to develop an accountability framework which may support the quality assessment and transparency of their activities.

Besides that, it is crucial to document all the relevant documents in each project (outputs, discussions, etc.) in order to **mitigate** the associated **risks** to staff changes or intangible assets loss (software).

Improve Training selection process

Training selection process should be transparent and should consider the Flemish criteria. Conflicts with regards to the selection of training candidates should be avoided via clear guidelines agreed upon by the different stakeholders.

Recommendation to VLIR-UOS

Increase the budget, make it more flexible, and simplify procedures

Cost-effectiveness of the Network programme is very high, considering the fact that five universities are involved. Donors should consider increasing the budget as well as providing more **flexibility** with regards to budget shifts between the different headings, which, in the end, may contribute to increase the impact of the action.

The collaboration between VLIR, partner universities and MINCEX could be simplified by updating the current ToR, and by not starting a new process.

Recommendation to Flemish partners

Increase the link with other cooperation programs 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 the current projects. The current cooperation with the Handicap NGO could be considered a good practice.

Intensify the interaction with Industry

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

1 Introduction

1.1. Background

1.1.1. General Objectives and guiding principles of the Network[2]

A Network University Cooperation (NETWORK) programme is a national level institutional network led by a former IUC - partnership with focus on a priority theme of the VLIR-UOS country strategy (nation-wide needs-based) and building on previous cooperation experiences. It is about multiplication and up-levelling of capacity building efforts. In fact, a NETWORK aims at "*Empowering local universities to unite themselves and together contribute to national goals in higher education and development*".

Network University Cooperation (NETWORK) aims at national level impact in a specific thematic domain by the provision of substantial support to a limited number of carefully selected partner universities located in a VLIR-UOS partner country. It builds upon the experiences of a former Institutional University Cooperation (IUC) partner which will serve as the coordinating university (hub).

A NETWORK focuses less on capacity building and more on harvest and multiplication opportunities addressing nation-wide needs in the educational and research area. It focuses on cross-institutional interactions, such as in inter-university curriculum development, joint degrees at Master and PhD levels, links to other networks and links to Flemish universities.

The specific objectives of a NETWORK partnership between various partner institutions in a specific country in the South on the one hand and Flemish universities and university colleges on the other are outlined in a partner programme composed of successive activity programmes covering an earmarked phase of cooperation.

Some guiding principles:

- Spirit of partnership, dialogue and mutual respect.
- Participation of high-level academic leadership is crucial (decision-making structures in all involved universities).
- Incorporation in local structures and systems (university, regional/national).
- Development Relevance: focus on changing lives (university and society=> interaction with government, local development actors, society in general), link with other ongoing projects implemented by Belgian development actors.

A network 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 coordination of an agreed upon programme is delegated to a local academic (Network Programme Coordinator) affiliated to the local coordinating university (and coordinator) and a Flemish academic coordinator, who have the responsibility to manage the implementation of the network programme and the constituent activity programmes. In the non-hub local partner institutions, the NETWORK programme is followed up by a representative.

[2] Based on ToR, p.2-3

1.1.2. Subject of the evaluation – Theory of Change of Network Programme[3]

In the context of scaling up capacity building to the national level (or regional in some cases) and building on previous long-term institutional university cooperation, former IUC partners can propose a Network University Cooperation (NETWORK). A Network University Cooperation (NETWORK) programme is a national level institutional network and thereby fits very well with the generic theory of change for VLIR-UOS in a given country. The intervention aims at contributing to a national level change through higher education cooperation around strategic themes of national priority (cfr. Link with the VLIR-UOS country strategy).

The generic Theory of Change is quite similar to the one of IUC programmes. The most important differences are:

- Improved research and educational practices are envisaged at different HEI through inter-institutional learning and exchange.
- The former IUC takes the lead in the implementation of the programme (even more South-driven than IUC).
- A NETWORK has the potential to empower the universities to unite themselves and together – in synergy - contribute to national goals in higher education and development.
- Stronger focus on harvest and multiplication.

A NETWORK programme is subdivided into a limited number of synergetic/complementary project lines contributing to the overarching theme of the NETWORK programme, rather to be interpreted as project-based intervention logics contributing to the same national level institutional and societal impact.

These different projects all have their individual results framework and underlying Theory of Change along the same period of execution of the partner programme phase. A NETWORK programme is more than the sum of its projects: through programme level management, the scale of the total programme, the interlinkages between the different projects and HEI, and the critical mass of capacity created, a NETWORK has the potential to empower the local universities to unite themselves and together – in synergy - contribute to national goals in higher education and development.

Programme level Theory of Change

The primary impact envisaged by a post-IUC NETWORK 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 involved local partner universities as development actors (strongly related to developmental changes). The inter-institutional national cooperation within a NETWORK strengthens this developmental change even and more brings about a higher proposed level of impact as compared to an IUC.

The below presented generic and simplified programme level ToC for an Institutional University Cooperation programme also applies for the post-IUC Networks. However, the transversal support domain will not be necessarily implemented through transversal projects. In some cases, this transversal support is embedded in the administrative Programme Support Unit or as transversal domains cross-cutting the ‘classic’ projects presented below.

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

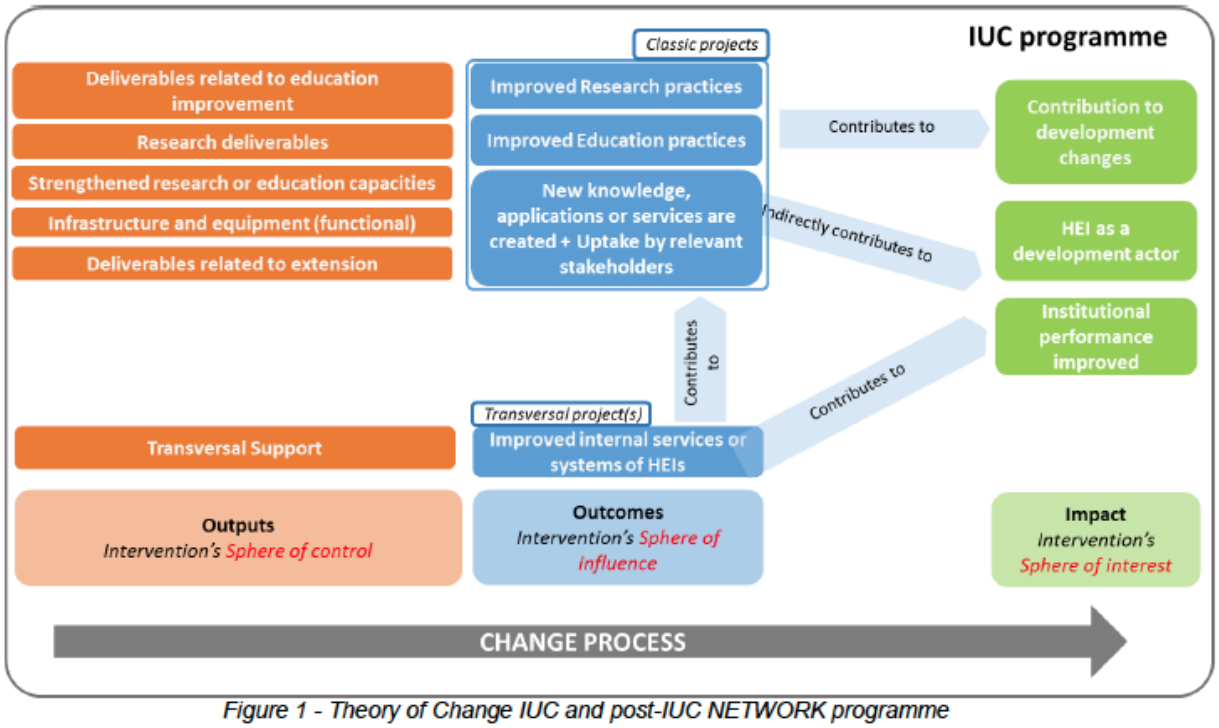


Figure 1 - Theory of Change IUC and post-IUC NETWORK programme

Project level Theory of Change

The NETWORK projects primarily contribute to development changes at impact level, and indirectly also to the institutional performance of the involved Higher Education Institutes (HEI) and their role as developmental actor(s). Some of these projects or the administrative support project (programme support unit) might also include the strengthening of transversal domains of importance for all involved HEI. However, VLIR-UOS did not foresee a separate ToC for these kind of projects, this is integrated in the programme level ToC.

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 HEI in Flanders and a partner country. These outputs are considered as 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 or services that are created + 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 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 contributing to 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 society. With this change, and the achievements at the outcome level, there will be a sound contribution to developmental 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).

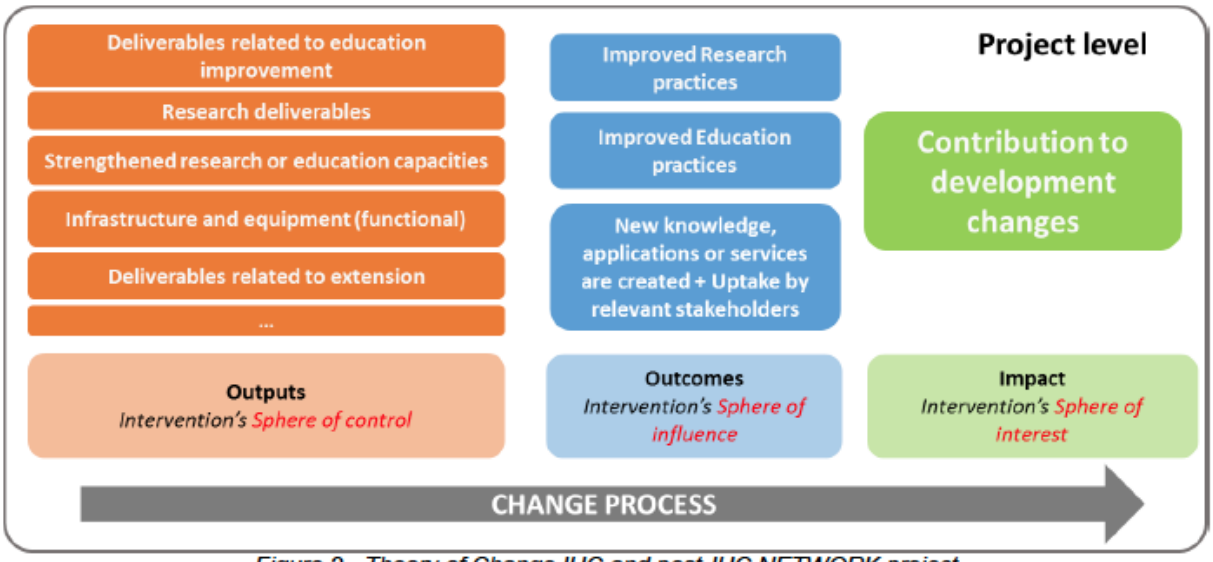


Figure 2 - Theory of Change IUC and post-IUC NETWORK project

1.1.3. Objectives of the Evaluation[4]

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't and why. The formulation of these lessons learned will contribute to the quality of ongoing and future NETWORK 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 NETWORK (on 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 NETWORK 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 NETWORK (programme level and project level). This is the basis of every NETWORK evaluation. Next to this objective, final NETWORK evaluations also analyse the prospects for the post-NETWORK period:

1. The performance of the NETWORK 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, particular attention has to be paid to efficiency and effectiveness.

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

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 is the potential overlap with the IUC programme coordinated by University of Oriente? How do they feed into the objectives of this Network and the other way around?

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. 11/30 ToR of the mid-term evaluation of NETWORK university cooperation in Cuba, coordinated by UCLV Cuba have 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 a means to raise hard currency, especially services concerned with health and tourism, amongst 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.

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 others 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. Nevertheless at the start of the Network programme, only seventeen educational centres were directly subordinated to it. The remaining centres (51) were mainly subordinated to the Ministry of Education, the Ministry of Public Health and other ministries and agencies. The general trend of the Cuban educational system has been its continued improvement and development. The process of extending the capacity to take part in? university studies in each and every municipality of the country is called the "universalisation of higher education", and constitutes one priority strategy of Cuban education at present. Along with this, another priority is the training of university staff, especially the formation of PhDs.

Another distinctive feature of the system of higher education in the past few years has been the creation of a university specialised in computer sciences (Universidad de las Ciencias Informáticas – UCI), which delivers specialists for the whole country. The Ministry of Higher Education emphasises the development of ICT in Cuban universities. Large investments have been made to improve the number and quality of the installed technology. A network of educational technologies has been set up.

The MHE, HEIs (and other research centres) are connected to an intranet, which facilitates communication and sharing of research information and resources between institutions, and offers access to the various thematic and research portals and networks, maintained by MHE and other specialised institutions. The intranet connectivity is relatively robust. Local management of the intranet, and of individual institutional resources available on it, vary considerably between institutions. National limitations on the existing telecommunications network have a severe impact on internet access for all HEIs. Bandwidth capacity for an individual institution rarely exceeds 30MBps (except for UCLV and UCI, which have over 50 MBps) and very often, the capacity is considerably lower than this as well as unreliable. System management practices, which differ from institution to institution, have an impact on internet access for staff and students.

The main problems in this sector are the lack of funds and an insufficient development of infrastructure and human resources. This holds both for research and development, for ensuring a sustainable higher education system and for the pertinent impact of ICT related research in the Cuban society.

The Ministry of Higher Education proposed five main action lines in order to reach high levels of use of ICT in the substantive processes involved. These are:

- Computer literacy
- Training on specialised informatics tools
- Integration of ICT in curricula supporting teaching and learning processes
- Development of group work supported by computer networks
- Stimulation of information research and application

The Minister of Higher Education states that "the use of ICT in teaching and learning processes is a very important element that complements and provides alternatives to the traditional professorial work but does not substitute it at all". The vision of Cuban Higher Education Ministry about the use of ICT comprises the following aspects:

- Strengthening substantive processes through a maximal use of ICT;
- Considering ICT as a decisive quality factor;
- Considering ICT as a resource to provide social equity in the access to educational services;
- Improving the efficiency of strategic integrated management in the national higher education system.

Main problems the sector is confronted with:

- Insufficient technological infrastructure: restricted availability of financial resources to improve infrastructure.
- Inadequate preparation of university staff about educational uses of ICT and information management.
- Limited knowledge about the use of ICT to support educational processes.
- Limited knowledge about new pedagogical models and strategies for learning.
- Limited knowledge about ICT to support information and knowledge management.
- No unique system that integrates the information management in all Cuban universities.
- Insufficient research work in the field of Educational use of ICT and information management.

Since the start of the programme, an important landmark was the approval in 2016 of the computerisation strategy of the Ministry of Higher Education. This in order to contribute to the computerisation of the Cuban Society by applying innovative methods based on ICT. One of the main goals was the conversion of the University National Network (REDUNIV) in the core of the Cuban Network for Advanced Education and Research, to promote the exchange of content and services among all educational and scientific institutions in the country and with similar organisations abroad. Several meetings have been held to discuss how to carry out this idea. The MES ICT direction in agreement with Cuban universities has proposed an Internet2 academic advanced network connected to CLARA. In order to make it possible, REDUNIV first has to grow in a national context.

1.3 Evaluation Methodology and process

1.3.1 Evaluation Framework

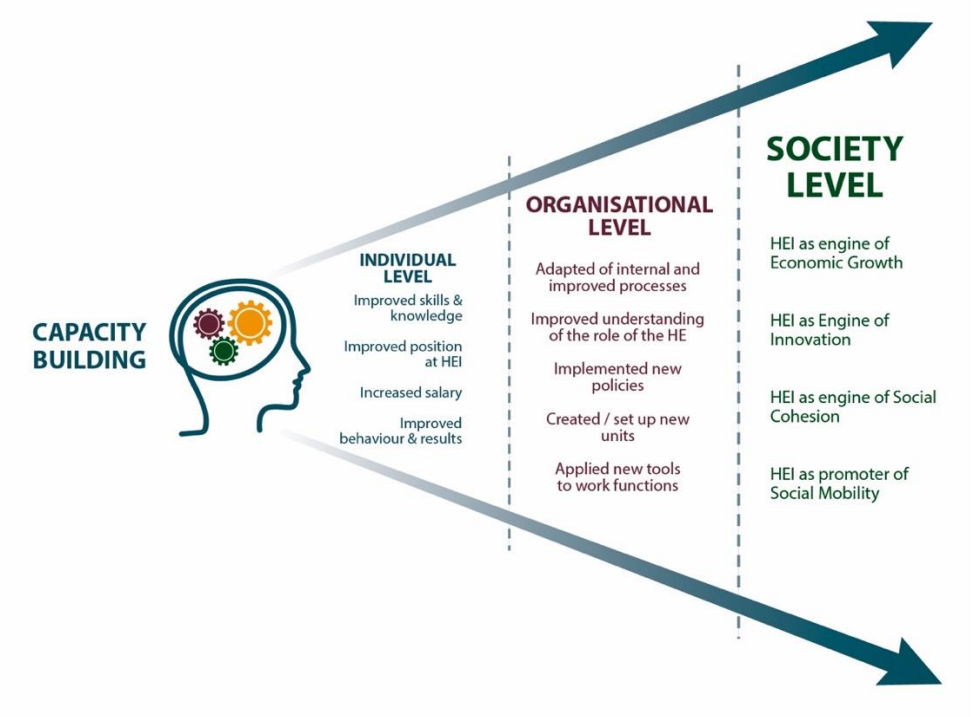
Following Baser and Morgan (2008)[5], there are three levels of capacity: a micro or individual level (new skills), an organisational level (new policies, institutional building) and a macro or society level (including any activity which could affect the enabling environment).

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 a reference).

The effects at different levels of the programme/intervention

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



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:

At the **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 the **organisational level**, beneficiaries may apply their new knowledge in improving either the unit's organisational structure and/or its organisational processes. This results in better internal coordination, as well as an increased and improved relationship 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 such as 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:

2 Criteria	3 Subcriteria
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 3.1. 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 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 need to realise the (criterion).

1.3.3 Methodology

The following phases in the methodology can be distinguished:

Deskbound research	Reviewing project docs (reports, LFMs, etc.), Reviewing self-assessment reports, deliverables, KRAs Indicators (annex 3.6), etc.
Interviews / North	Interviews with Flemish project leaders via Skype (**1**) or live at the 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). **27** Interviews.
Online questionnaire	(SurveyMonkey) to assess individual impact. **120** responses (≥ **50%**).
Focus Groups & Discussions	Focus Groups and discussions with around **115** 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 3.2. 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 were carefully planned. The most important consequence is that external stakeholders could not be interviewed at a large scale. This could be important to identify 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 that specifically target the impact at societal level.
2. Not all details of the **self-assessment reports** could be double-checked. In particular on the KRAs, 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 on 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.
5. **It has been very difficult to distinguish programme level and project level.** The programme level has been formulated as the sum of the projects. The logical framework at programme level and project level are identical. Consequently, it has been very difficult to distinguish and evaluate both levels separately.

1.4. 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 strengthen 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 respect, 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. At the universities of the Network programme, we have identified several guidelines and policies in this direction. Thus, we may conclude that at the Network 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 Program, 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 Program 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. Universities of the Network programme are working in the same framework. Evaluators consider Environment a priority issue at all levels, including within the Network programme.

D4D. MES has a strategic planning 2017-2021 of the Information, Communication and Computerization process. It includes the priorities of Computerization for Higher Education in Cuba, ranging from the improvement of connectivity in all centres, to the computerization of university processes. It is clear that the Network programme is fully contributing to these priorities, and it has been emphasised by MES that the participating universities are the vanguard in these national policies. Based on this, Evaluators consider D4D a high priority for the Network programme.

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

1.5. Short description of the Consortium and Network Programme

1.5.1. The Consortium

The ICT for development NETWORK Cuba is an academic cooperation network that emphasises human capacity building through high-impact research pertinent to the economic and social priorities of the country, all related to ICT. It proposes, among its objectives, the development of undergraduate and postgraduate programmes supported by ICT and offered by distance education modalities with a joint curriculum design; the PhD formation in disciplines related to ICT (favouring the joint PhD option). An important initiative is the development of summer schools offering courses of high scientific value that will be extended, through ICT, to all institutions of higher education.

The selection of participating universities was made taking into account their geographical location, their regional importance and impact, ensuring that all project results can be extended to the majority of Cuban society. Each of the selected universities will become an antenna that radiates its experiences to other universities in their geographical surroundings, encouraging the creation of regional networks that allow local replication of the results achieved in the project.

To achieve these goals three project lines have been developed:

- Research in ICT related sciences (RESICT);
- Open ICT systems and management (ICTSYS);
- ICT supporting the educational processes and the knowledge management in higher education (ELINF).

The member universities of the network are regional or national leaders in the themes proposed to be developed. **UCLV** (Universidad Central "Marta Abreu" de Las Villas) is a recognised national leader in ICT research, infrastructure management, educational technologies and information management, justified by the number of high-impact scientific publications, the number of PhDs, international and national awards, advice given to other institutions, capacity building activities, etc.

University of Holguín (UHo) is a recognised leader in the Eastern region. From a national perspective, it has the strongest group in CAD CAM. The results in educational technologies are quite good and the university has a very good work relation with the industrial pole of its province (one of the most important ones in Cuba).

University of Camagüey 'Ignacio Agramonte Loynaz' (UC) has results in the application of ICT to educational technologies and in the development of research in computer sciences. This University shows expertise in biotechnology, which is important for bioinformatics.

Universidad de las Ciencias Informáticas (UCI) shows the best results with respect to the link between universities and enterprises. The commercialisation of their ICT products provides a very important income for that institution and for the country.

University of Pinar del Rio "Hermanos Saíz Montes de Oca" (UPR) plays a remarkable role in the Western region, marked by its relation with one of the most important industries of electronics . Pinar del Río is the Cuban province with better results in environmental sciences (forest conservation, air quality, sustainable tourist development). One of the most important investments of the country is the

harbour of Mariel and its development zone, where the UPR is present; the proposed network will take advantage of this.

The programme has foreseen to work as an antenna that broadcasts all results to the other universities that are not a member, located in the region of influence of each member university. The idea is that, taking advantage from ICT, the courses research results and PhD programs can be extended to most of the Cuban universities, setting up a real cooperation network in ICT.

1.5.2. The programme

ICT for development is a high priority theme for the Cuban government and as a transversal domain of great interest it offers opportunities for the deepening of national Cuban intra-university cooperation and participation in regional, international networks. Through the creation of an 'ICT for development-network' and by multiplying the results of a successful IUC-programme (2003-2012) with Universidad Central "Marta Abreu" de las Villas (UCLV), national impact is expected to be achieved.

The VLIR-UOS Cuba ICT Network coordinated by UCLV broadens ICT related capacity building and research pertinent to the economic and social priorities of Cuba. The project activities focus on ICT systems and management, ICT support in educational processes and knowledge management and research in ICT related sciences (RESICT). The knowledge and know-how of six Cuban universities is brought together: Universidad Central "Marta Abreu" de Las Villas (UCLV) (Central University "Marta Abreu" of Las Villas), Universidad de Pinar del Río "Hermanos Saíz Montes de Oca" (University of Pinar del Río), Universidad de las Ciencias Informáticas (UCI) (University of Informatic Sciences), Universidad "Oscar Lucero Moya" de Holguín. (University of Holguin), Universidad de Camagüey "Ignacio Agramonte y Loynaz" (UC) and Universidad de Oriente (UO).

The **overall objective** of the programme has been formulated as follows: to develop good university practices about research and the application of ICT in order to improve the quality of the Cuban higher education outcomes by focusing on the main priorities identified in the strategic plan of the participant universities; to disseminate the use of technologies, methods, and advanced research results in order to help Cuban society solve their main economic and social problems.

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

Project	Specific objective
Project 1 (P1): Research in ICT-related sciences	To establish a consolidated system of research and knowledge transfer in ICT based on the cooperation and interdisciplinary work; To reach a solid platform of specialists in ICT in order to solve scientific and technological problems relevant to Cuban Society.
Project 2 (P2): Open ICT-systems and management	Build the necessary capacity at five partner universities to administrate, develop and implement the state-of-the-art ICT-services, systems and applications by using free software; Putting into practice the 'train the trainer'-principle to share the knowledge and expertise obtained in the framework of the network to the rest of the Higher Education System.
Project 3 (P3):	To enhance the capacity of participating universities to design and apply appropriate and sustainable ICT-facilities

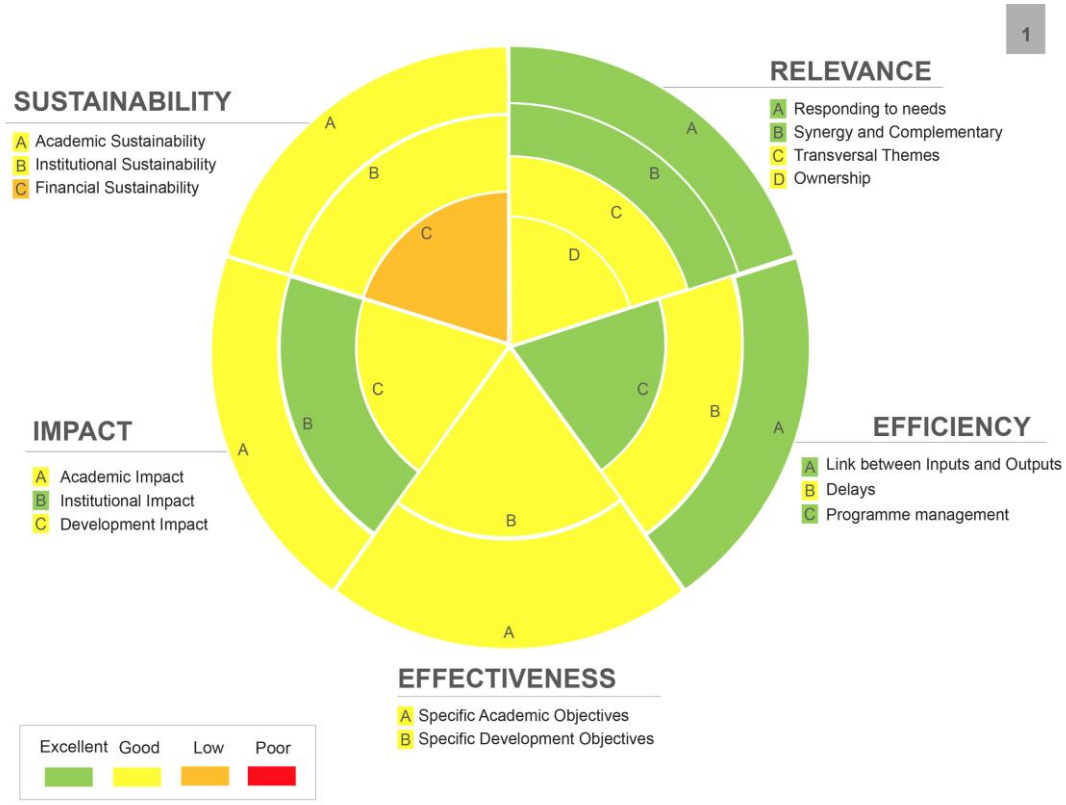
ICT in support of educational processes and the knowledge management in Higher Education	for educational purposes; To enhance the capacity of participating universities for a better management of the information in learning and research.

2 Evaluation

2.1 Evaluation of the programme level. REDTIC

Considering the Logical framework 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. After 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 taking advantage of the synergies.

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



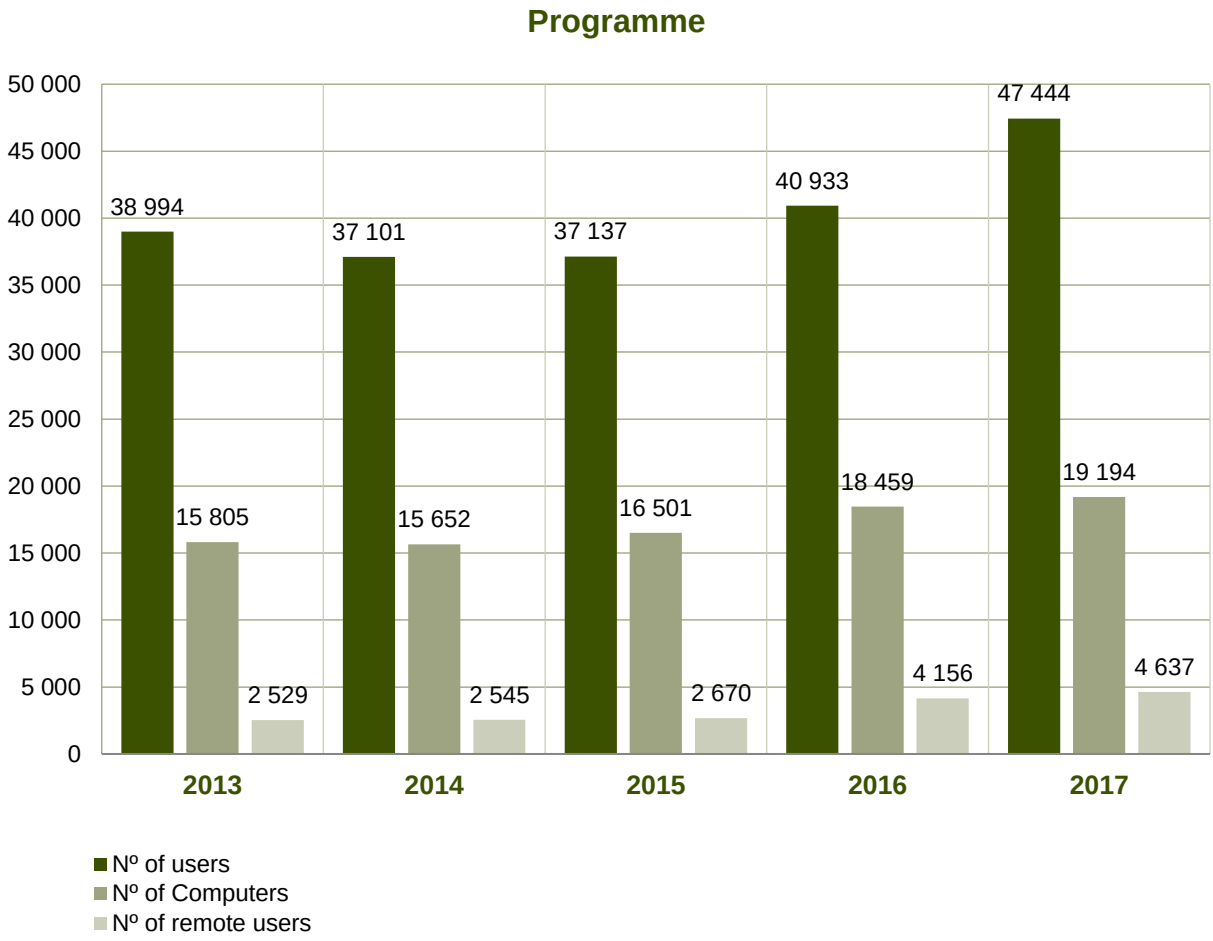
2.1.1. Relevance

1.1. Responding to needs Score: **Excellent**	- The relationship of cooperation with the Flemish counterparts date back to more than fifteen years ago if we take into account the IUC programme of the UCLV, where some of its projects continued in the NETWORK programme. - These years of sustained cooperation, endorsed by excellent results, are a sign of a constant, transparent and communicative work strategy. During all these years, a lot of experience in management and administration of collaborative projects has been transferred to the Cuban counterparts. - The NETWORK programme in Cuba has a national coverage with a direct intervention in five partner universities. It has provided exchange of

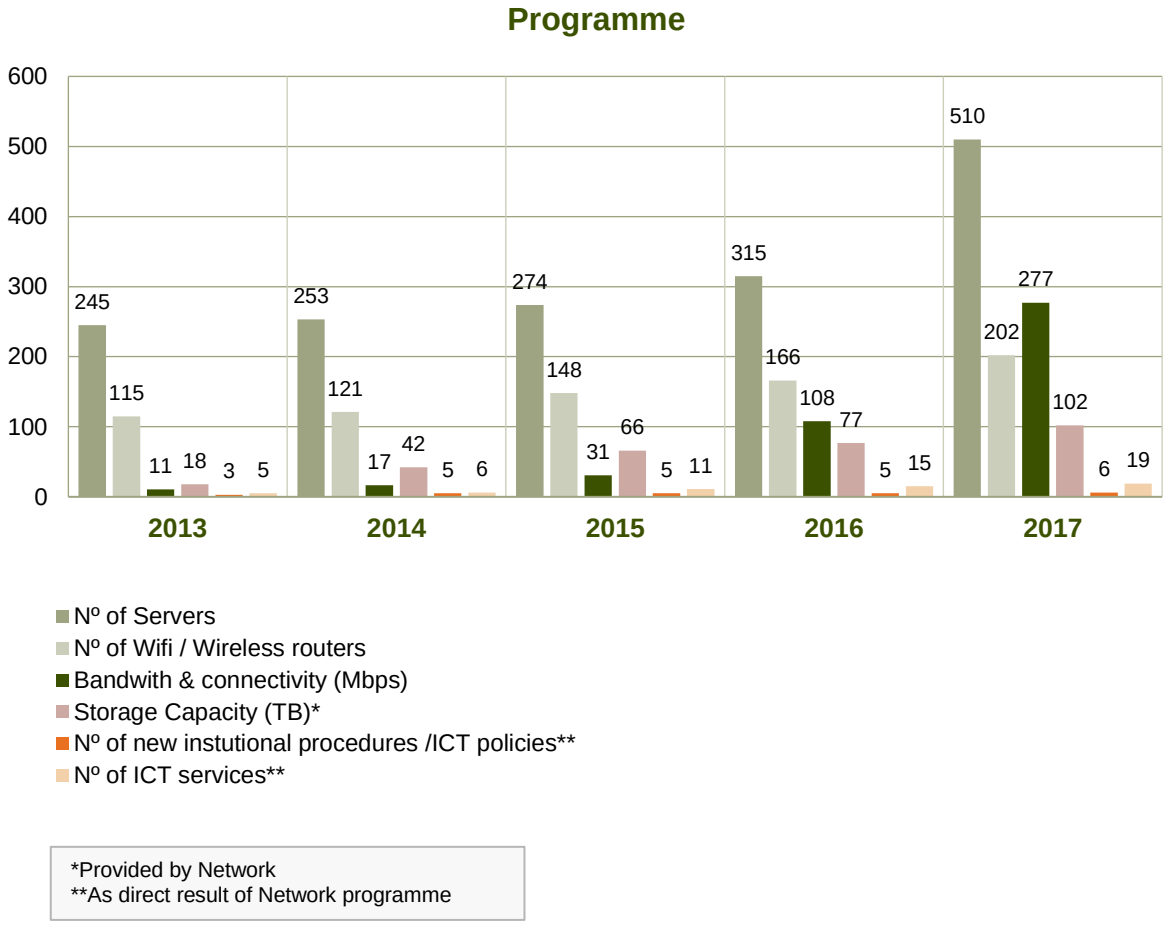
	people (staff, academics, specialists, PhD students, etc.) between North and South. - The programme has given the possibility to involve the pedagogical faculties in topics related to educational technologies, e–learning and the assistance to teachers and researchers, in the didactic and usage of new models for the Teaching-Learning process by using interactive platforms (MOODLE). - Technological policies were implemented at partner universities in order to migrate IT-services to open sources and free software technologies (email servers, proxy servers for Internet browsing, web servers for publishing own content, file servers, user directories and a common virtualization platform using Proxmox). It has been included in the strategic plan of all partner universities. - The Cuban Virtual Learning Management System for Higher Education has been strongly influenced by the use of Moodle and Dspace as part of its national ICT-strategy, which are the platforms to support the Virtual Learning Environment in the country. For a good library management, an improvement and further development of the library system ABCD (version 3.0) was done in order to standardise the information management procedures used in all Cuban university libraries, with the participation of functional specialists from our partner universities, for making the procedures easy and to raise them to international standards. - The NETWORK programme has been an example of successful international collaboration, it is recognised by MES, that frequently demands some help to assist them dealing with important international delegations and visiting other countries as part of Cuban delegation for assisting the Ministry.
1.2. Synergy Score: **Excellent**	- Evaluators found many important synergies between MES-activities and the NETWORK programme related to the computerisation of university processes as part of the strategy of computerisation of the country. It is highlighted that the MES-management develops a Work Program for Computerization of processes (with the University of Computer Sciences, UCI, belonging to the NETWORK programme), which are currently implementing and/or developing about fourteen software systems, that are having an important impact on the entire educational system. - As an example of progress in this task, MES highlights the migration of the management system used in university libraries: ABCD, version 3.0, developed in the framework of the NETWORK program. Although there is excellent synergy with MES, more work should be done for the internationalisation of the product. FAO and UNESCO have shown interest in these products. - The synergy of the NETWORK programme has spread to other Belgian actors of collaboration in Cuba. The granted Close the Gap ICT Outreach programme project is a good example of synergy, where two collaboration programmes (VLIR-UOS-NETWORK and Handicap International) and two Ministries (MINED and MES) worked together. This synergy allowed the first incorporation of some academic units to the international

	collaboration, especially those devoted to special education at the universities pedagogical schools in UPR, UCLV and UHo. It is an experience where all parties involved felt an important benefit.
1.3. Transversal themes (gender, environment and D4D) Score: **Good**	See 1.6
1.4. Ownership Score: **Good**	- In general, there is a wide recognition of the important impact of the NETWORK programme for the partner universities, and there is a great appreciation by HEIs hierarchy, that consider this project of vital importance for the ICT-development of their universities. The Minister of Higher Education considers the NETWORK programme of VLIR as one of the most important forms of cooperation in Cuba for the MES-system. - The director of computerisation of MES considers the NETWORK fundamental for the development of computerisation and research in the area of computer science in Cuban universities. - The NETWORK programme is a thematic network that promotes research, development and technological innovation in the area of ICT. This means that the stakeholders involved in the project in the area of research are mainly from the careers of telecommunications, automatic control, informatics, information sciences and computer science, because of the presence of approved doctoral programmes in these areas. - In the field of information science and library management, the commitment and meaningful participation of CRAI members in universities can be appreciated. - Educational technology manages to link members of pedagogical schools who provide the required didactics and benefit from the resources and e-learning platforms available for training and research activities. - ICT departments receive a direct benefit in terms of infrastructure and staff training in state-of-the-art computer programming and administration technologies. - In general, students and professors receive direct benefits from the project, since the development spheres have a transversal impact on the institution favouring all the university processes (academic and administrative) that now depend on ICT. This improves the university indicators and hence the importance and recognition that each institution gives to the project. - In the area of ICT in general (research in computer science, telecommunications, automation and information science, educational technologies and systems and infrastructure development) teachers, students and specialists clearly identify opportunities for professional development.

Impact of the project at Network level with regards to the Nº of Users, Nº of Computers and Nº of Remote users



Impact of the project at Network level with regards to the Nº of Servers, Nº of Wi-Fi/Wireless routers, Bandwidth and connectivity, Storage Capacity, Nº of new institutional procedures/ICT Policies and Nº of ICT-services



2.1.2. Efficiency

P.2.1. Link between inputs and outputs Score: Excellent	- All the budget used by the project has been in correspondence with the planned activities and according to the programme objectives. - See details below in **Financial Management Analysis at programme level.**
2.2. Delays Score: **Good**	- Annual activities plan (Annual planning AP 201X) is approved a year in advance according to the expected outcomes and partner programme prospective. - The implementation of activities should be fixed in the planned budget. Any shift in the budget should be approved at the JSC, LSC and purchase committees in order to guaranty the achievement of the project objectives. There are some unexpected situations the programme has to deal with. The programme started its execution in Cuba almost one year later; so many adjustments in the budget were needed to remediate the situation.

	- The experience with Joint PhD students reflects a delay according to the original plan. In all cases, it has been needed to postpone their private defence. The main reasons have been the needed time awaiting the results of some experiments in process, the confirmation and/or publication of scientific articles in intentional journals and making a proper writing of their PhD thesis. In such cases, some other expenses (operational or investments) should be done in advance shifting further scholarship budget. But it has to be an exception very well justified and approved by the JSC and VLIR-UOS. - On the other hand, the increase of tourism in Cuba (and increase of prices) has considerably limited the activities associated with the exchange of specialists among partner universities and the development of thematic workshops. This has significantly affected project 3 ELINF, which has motivated the need to readjust the budget by advancing infrastructure costs.
2.3. Programme Management Score: **Excellent**	- The management of the programme is very well-structured with the Flemish and local steering committees in the North and South respectively. - The FSC is celebrated twice a year and the LSC takes place with a quarterly frequency by video conference. Every month, a purchase committee is meeting at the coordinating university (UCLV) for tendering analysis and detailed information for the acquisition of goods and services. - One of the most relevant achievements is that a complete version of the procedure manual was attained, with the contribution of the different partners and actors in the NETWORK programme, and the accumulated experiences during the first cycle of three years of the programme. - Most of the coordination among universities in the NETWORK is performed electronically, and periodic meetings of the LSC are made by Video-conferencing. This electronic data is part of the project file and keeps track of all electronic communications that can be used as evidence to resolve discrepancies by checking agreements. - There is a systematic participation of project leaders and focal points in steering committees of the programmes. It's good to clarify that the management structure of the programme nominates a person as "Representative of the programme" at every partner university as a counterpart for the local coordinator. The "Representative" is nominated by the Rector of the partner university and is responsible for the implementation of the programme in partner university and the coordination activities with focal points. Focal points are the Project leaders' counterpart at partner universities. All Representatives, Focal points, local project leaders and coordinator integrate the Local steering committee (LSC) that is held with a quarterly frequency by videoconference. The minutes of the LSC are taken as the bases for the purchase committee. The purchase committee is chaired every month by the Local coordinator at coordinating universities, and is integrated by project leaders and

	members of the internationalisation, financial and collaboration departments at the coordinating university. - There is a fluid and frequent communication within the programme. Although the monthly purchase committee is meeting at the coordinating university for the final approval of the implementation of activities, the acceptance of activities has to be received by the partner university involved (e. g. local workshops, exchange of specialists, projects coordination meetings, scholarships and training, purchases and their distribution, etc.). - All team members of the NETWORK programme interact at any time with the Focal points at partner universities, who are in contact with their respective project leaders. For institutional actions they directly contact their representative at partner university. If any action at the programme level is needed, the representative and project leaders are able to contact the local coordinator at any time. - Communication/Project management between North and South has been characterised by its fluency, sincerity, openness and transparency.

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

The first phase of the NETWORK programme is budgetary planned to handle 1.5 million euros, equally divided into 250,000 euros for each of the six years (see table 1). The annual budget is distributed among four projects (P1 RESICT, P2 ICTSYS, P3 ELINF and P4 PSUP), the administration funds in the North E1 (3% of the total budget) and in the South E2 (3% of the total budget). In this analysis we will focus on the first five years under evaluation.

The administration budget in the South (E2) is distributed among the different universities and administrative units at the coordinating university that support the programme, according to the following distribution:

- International relations office: 6%
- Department of economics, accounting and finance: 8%
- UCI: 8%
- UPR: 8%
- UC: 8%
- UHo: 8%
- Department of Projects and Events: 16%
- Project Coordination: 38%

38% of the budget allocated to the coordination of the project is used to create a reserve to compensate for any payment mistakes (delays or not accordance with VLIR-UOS rules), or for the needed expenses not foreseen in the programme formulation considered essential for a smooth functioning. This has allowed the purchase of the project pick-up car (Mitsubishi L200 in 27950 USD), which has been vital for the proper project implementation, supporting all activities.

Table 1: Overview of the planned budget of the VLIR-UOS-NETWORK programme in the five first years of the first phase (in euros)

	AP2013	AP2014	AP2015	AP2016	AP2017	Total
Project 1 RESICT	70,000.0	70,000.0	70,000.0	71,645.0	71,286.0	352,931.0
Project 2 ICTSYS	70,000.0	70,000.0	70,000.0	91,878.0	71,500.0	373,378.0
Project 3 ELINF	70,000.0	70,000.0	70,000.0	49,293.0	71,714.0	331,007.0
Project 4 PSUP	20,000.0	20,000.0	20,000.0	17,184.0	15,500.0	92,684.0
Administration E1	7,500.0	7,500.0	7,500.0	7,500.0	7,500.0	37,500.0
Administration E2	12,500.0	12,500.0	12,500.0	12,500.0	12,500.0	62,500.0
Total	**250,000.0**	**250,000.0**	**250,000.0**	**250,000.0**	**250,000.0**	**1,250,000.0**

Table 1 shows the distribution of the planned budget for each of the subprojects of the programme. During the first three years, the distribution of the budget was the same for the three thematic projects. In the year AP2016,a readjustment of the budget was made, taking into account a series of external factors which threatened the successful implementation of the programme activities:

a) The energy problems in Cuba affected local transportation as petrol allowances have been reduced.

b) University hotels of UPR, UHo and UC have been closed in order to offer more space for tourists. Due to the relaxed relation with the USA, (about eight direct flights to Cuba), hotels are almost always full during the whole year. Even if reservations are made long in advance, the hotels often cancel the reservations to accommodate tourist at higher prices. The hotel at UCLV is used by the doctoral school from September till half of December, and UCI is very often fully booked by MES to accommodate Cubans during different events organised in Havana.

c) Difficulties to bring experts from the USA to partner universities, as special permission from different Cuban Ministries are needed, often taking a long time to receive.

This has mainly affected operational costs of project 3 ELINF, which had planned different training/workshops and exchanges of tool developers between universities. As result, the development of the different tools planned by project 3 was affected and an important part of its budget could not be used (+/- 42,000 euros). Project 3 worked out a new strategy for the future to speed up the development by bringing key developers to Belgium with specific assignments in the frame of the different tools.

Relationship between means, results and objectives

The entire budget of the programme has been used in correspondence with the planned activities and according to the programme objectives. In all cases, intermediate results has been reached. The annual budget of each year (250,000 euros) has been executed with an efficiency of 100% according to the financial reports certified by VLIR-UOS (See financial reports AFR2013-2016).

Table 2. Overview of the executed budget per project of the NETWORK Programme first phase

a) Projects 1 RESICT and 2 ICTSYS per year

	P1			P2		
Year	Investment	Operational	Scholarship	Investment	Operational	Scholarship
2013	7,949	48,626	8,654	64,515	6,653	6,115
2014	1,870	14,124	57,746	37,634	22,464	9,483
2015	2,936	9,750	63,380	49,956	6,901	21,749
2016	0	17,954	56,948	46,112	11,922	22,042
2017	0	26,149	56,102	4,370	13,574	14,852
SubTotal	12,755	116,603	242,830	202,587	61,514	74,241
Total Project	372,188			338,342		

b) Projects 3 ELINF and 4 PSUP per year, and yearly execution

	P3			P4			
Year	Investment	Operational	Scholarship	Operational	E1	E2	Total YEAR
2013	14,869	39,314	13,084	19,947	7,500	12,500	249,726
2014	17,815	23,348	28,568	16,948	7,500	12,500	250,000
2015	3,403	31,680	24,525	15,130	7,500	12,500	249,410
2016	13,406	29,737	13,600	18,254	7,500	12,500	249,975
2017	0	28,209	22,930	17,265	7,500	12,500	203,451
SubTotal	49,493	152,288	102,707	87,544	37,500	62,500	
Total Project	304,488			187,544			

There are representative indicators of the efficiency of the project in terms of obtained results and the budget used in each subproject, and many actions that significantly increased the efficiency of the NETWORK programme for most of the activities. Table 2 shows how project 1 RESICT, devoted to high-quality research and PhD formation, has only used 3.4% (12,755 euros) of infrastructure costs to guarantee the minimum working conditions for research labs at partner universities with less technological development (Camaguey, Holguin and Pinar).

31.3% (116,603 euros) of the P1 RESICT was dedicated to the development of doctoral schools, summer schools in advanced topics of computer science, actions of coordination, participation in scientific conferences and workshops with the industry. The efficiency of the budget looks very positive if we take

into account that more than 80 PhD students were trained in Cuba with the participation of more than 17 first-level Flemish academics during two PhDs schools of ten and nine weeks each one and two summer schools. Workshops with the industry were developed every two years. The partial or total funding of researchers for the publication of their results is also afforded here. Partial stays were also co-financed by the NETWORK programme and Flemish universities for participation in international conferences and paper submission to periodic journals.

The largest expense of project 1 RESICT was aimed at PhD and research scholarships, where 242,830 euros were used (highlighted in red), which represent 65% of the total budget of this project. This budget was very well used, if we take into account that 22 training stays in Belgium were granted for PhD formation, and as a result, ten students supported by the programme already received their PhD degree. It is worth mentioning that the four-month stay for Joint PhDs is costing around 11 000 euros and that the programme has eight students in this modality. Several of these students have extended their research stays to periods of six, eight and ten months each year, financed by their research labs, making even more efficient the use of the budget. Relevant scientific research has been developed by PhD students in Joint PhD modalities. This has motivated the research labs in Flemish universities to extend the research stays of our PhD students with their own funds. In almost all cases, they have practically doubled their stays. This has guaranteed a successful scientific production and the sending of high-level articles to high-impact journals.

The ICTSYS P2, responsible for infrastructure development and systems administration has executed about 338,342 euros. 60% has been dedicated to the development of infrastructure (Table 2 a. highlighted in red), mainly in the Universities of Camaguey, Holguin and Pinar del Rio, which have made a significant technological leap with the creation of data centres and more than 21 connected networks. It is maybe the most visible impact of the NETWORK Programme at the partner universities. Just to give an example, the donation managed by the project and received from the Flemish universities for scientific computing purposes is valued at one million euros, which shows how outstanding the results in terms of infrastructure are.

Additionally to the planned procurement, every year, important ICT-infrastructure donations (Servers, computers, datacentre and networking materials) from Belgian institutions are shipped to Cuba and distributed among partner universities. These donations are obtained as an extension of the project, and have contributed significantly to the development of infrastructure at partner universities and broadened the scope of the results and the possibilities of development.

In addition, two Close the Gap-projects were obtained during the first phase that contributed to more than 500 computers for partner universities and other sectors of society.

The remaining budget in P2 ICTSYS was devoted almost equally to the training of specialists in Belgium 22% (74,241 euros), with 25 stays of one month each, and 61,514 euros (18%) to the development of workshops on free software and exchange of specialists, agglutinating the main software developers in the country, where important international experts were invited in all cases. Around 180 specialists were mobilised in Cuba as part of the DevOps movement promoted by the project. Each year, a free software workshop is held with the participation of international experts and members of all universities of the project.

Project 3 ELINF is the one with the lowest budget executed (304,488 euros - see the aforementioned budget adjustment explanation in year AP2016) and where half of the budget has been dedicated to

operational costs 152,288 euros (Table 2 b. highlighted in red), guaranteeing the development and deployment of applications in different thematic areas that bring together several communities of different experts. The local exchange of specialists has been decisive in this project, but the results achieved that include national deployments make the results more than satisfactory if we take into account the commercial cost of producing informatics products by any software industry. An important budget has also been dedicated to the training of specialists in Belgium and other European universities, where three pre-doctoral stays have been funded - Two of which in joint PhD modality and about 20 specialists have been trained in Belgium (or Europe).

The programme support unit project P4 PSUP uses a fixed budget of around 15,000 euros each year for the compensation of the Belgian coordinator (5,000 euros) and the Cuba-Belgium exchange of the Belgian and Cuban coordinators and programme manager (around 10,000 euros). For actions of coordination in Cuba, the expenses average is about 2,500 euros per year, which is used very efficiently to guarantee the coordination of five partner universities plus the Close the Gap and additional cross-cutting projects, yearly shipments of infrastructure and other duties according to MINCEX and MES-rules for collaboration (monitoring, reports, meetings, audits, etc). It is observed as a great efficiency and effectiveness in the management of the programme.

Only about 46,200 euros belonging to AP2017 have not been considered in table 2, corresponding to the last quarter of expenditure in Belgium and did not yet report in the last financial report still under updating. But most of them correspond to infrastructure costs of P2 ICTSYS.

Table 3: Overview of the approved budgets and expense ratio for the years 2013-2016 (source: AFR2013-2016)

	2013		2014		2015		2016		Total	
Budget line	Approved budget	Expense ratio	Approved budget	Expense ratio	Approved budget	Expense ratio	Approved budget	Expense ratio	Approved budget	Expense ratio
Investment costs	**76,146**	114.69%	**51,805**	110.64%	**38,341**	144.57%	**76,085**	78.23%	**242,377**	107.11%
Operational costs	**141,654**	80.40%	**105,390**	72.95%	**103,599**	59.82%	**62,590**	124.41%	**413,233**	80.01%
Scholarship costs	**12,200**	235.85%	**72,805**	131.58%	**88,060**	127.87%	**91,325**	101.39%	**264,390**	124.73%
Administration costs	**20,000**	100.00%	**20,000**	100.00%	**20,000**	100.00%	**20,000**	100.00%	**80,000**	100.00%
Total	250,000	100.00%	250,000	100.00%	250,000	100.00%	250,000	99.99%	1,000,000	100.00%

Table 3 shows an execution of 100% of the total budget, being no underspending due to effective action in the management of the programme to solve the contingencies for which the adjustments were made and appropriate actions were taken. Only a marked overspending is observed in the scholarships costs of AP2013, due to the low budget planned for scholarships in the first year of the programme, where it was not foreseen to have enough time for the preparation of a greater number of scholarships due to the late release of the DGD-VLIR-UOS-VUB funds, but with the extension granted by VLIR-UOS, this possibility allowed the realisation of some extras research and training stays. These actions were basically compensated with operating costs. This deficit in the mobility of scholars in the first year resulted in an overexecution of scholarship costs in the next year AP2014, which also had to be again compensated operating costs. In general, in the first three years, the investment costs budget line was overspending (mainly in year three AP2015) in order to balance the underspending in operational costs. The

readjustments to the budget made in year four AP2016 achieved a much more balanced global balance, accepting the VLIR-UOS flexibility for transferring budget between budget lines, as long as the adjustments are justified.

2.1.3. Effectiveness

3.1. Specific Academic Objectives Score: **Good**	- Quality regarding PhD formation has been a priority. Two editions of the doctoral school were organised. During the first edition, ten Cuban universities participated with more than 40 PhD students, who received a programme of courses taught by thirteen Cuban and ten Belgian professors. These students were the quarry for the PhD scholarship planned in the first cycle of the NETWORK. The second edition of the doctoral school hosted 36 PhD students from seven universities, impacting other Cuban universities beyond the NETWORK programme, especially the University of Oriente (ten PhD students), who is a special partner for the programme. From these doctoral schools thirteen candidates were selected (first edition), and ten (second edition) candidates to apply for Joint PhD scholarships (nine Joint PhD were granted) and recycling scholarships (about ten) to improve their PhD research in Belgium. Other PhD students received support for their participation in international scientific conferences. - As part of the professionalisation of technical experts who are linked to system development and applications, about 50 staff received training at Flemish institutions. As a result, several technical manuals and Wikis were posted on the NETWORK site (http://redtic.uclv.cu/dokuwiki/) for improved sharing of the knowledge transferred. - The PhD programme of the network is progressing successfully. 22 training stays in Belgium were granted for PhD formation, and as result, ten students partially supported by the programme have already received their PhD degree. Five students doing a joint PhD should have their private defence the current year (2018). - The quantity of accredited programs on ICT has increased in all partner universities, but also the quality of the accreditation has improved. Several programmes received an Excellence mention, some even received international accreditation. For example, PhD Programs on Informatics at UCLV and UCI, have been evaluated in the category of Excellence by the National Board for Programs and Institutions Evaluations in Cuba (JAN). - The PhD Program on Informatics and the Master Program on Computer Science at UCLV have received the Award for the quality of postgraduate studies in Iberoamerican, given by the Iberoamerican Association for PostGraduate Studies (AUIP). - The Master Program in Computer Science and Master Program in Signal and Image Processing at UCLV, the Master Program in Project Management at UCI, Master Program in Applied Mathematics and Informatics for management, the Master Program in Computer Aided Design and Manufacture of UHo, and the Master Program on Applied Informatics at UC, have been evaluated in the category of Excellence by the JAN.

	- As a result of the project a national platform was developed that support educational and information services for all Cuban universities. For that purpose, a Technical Reference Model that integrates learning tools and services (Moodle), research networking tools (VIVO), library management system (ABCD3.0). Digital libraries and institutional repositories (Based on Dspace and other facilities like DarkArchive and EsFacil for metadata extraction and authority control) are available with a definition of policies for institutional repositories.
3.2. Specific Development Objectives Score: **Good**	- Thanks to the pilot projects developed by the NETWORK programme, regarding the development of institutional repositories based on DSPACE, it has allowed the promotion of the scientific production of Cuba, increasing its visibility and position in the web ranking of repositories. - As part of the development objectives of the project, regarding the introduction of the results and the university-industry linkage, several workshops with the main Cuban industries of software and IT developments were held (DESOFT, DATYS, XETID, CITI, CENATAV, …), as well as some important ministries that contribute to the VLIR-UOS country strategy in Cuba (Health, Tourism, Agriculture and Informatics) were present. Several actions were identified and showed their explicit interest to participate as stakeholders of the NETWORK programme. - Some external stakeholders had a more active participation in the linkage university-industry: ICT companies such as XETID, Desoft, Etecsa; high-technologies institutions such as BioCubaFarma (an important collaboration with ETI-BioCubaFarma has been started in the topic of High Computer Performance, involving several partner universities like UO, UCLV and UCI); OSDE of Minister of Communications, Ataxia clinic in Holguin (a stable collaboration has taken place for several years between this institute and UHo for biomedical process modelling of neurological diseases, mainly hereditary ataxia). - The Network programme has implemented a transition process towards free software technology at the level of IT-services in all partner universities, as pilot projects for its generalisation to other Cuban universities. - During the lifespan of the programme, two Close the Gap Project initiatives were carried out. It meant an input of 520 computers that remedied some shortcomings in academic units, research labs and twelve special education schools for children with disabilities and seven homes of children without filial protection. These institutions belong to the Education ministry in Cuba (MINED) and are attended by the provincial directions of education in Pinar del Río, Santa Clara and Holguin. The procurement regarding purchases and donation were oriented to improve network infrastructure at level of university campus, upgrade the servers to support IT-applications and services, and physical infrastructure in the principal datacentres with the installation of power backup and cooling systems. Universities like Pinar del Rio, Camagüey and Holguin (UPR, UC and UHO) were prioritised with the planned procurement of the programme. - The NETWORK programme has been very active organising VLIR-UOS' participation in the traditional international conferences "Universidad

	2014-16-18", the most important higher education conference in Cuba. It has been supported by VLIR through cross-cutting projects promoted by the NETWORK programme. These cross-cutting projects afforded workshops pre and post congress (Ej: English Corpus linguistic and High Performance Computing), with regional participation from Ecuador and Peru. - The international Ranking Web of Repositories developed by the Laboratory of Cybermetrics from the Higher Council for Scientific Research (CSIC) of Spain, has included the repositories from all partner universities of the NETWORK programme, and other universities in Cuba belonging to MES. It has been a result of technology transfer and the NETWORK contribution to the repository policies, with a framework of Policies (PoMSTI) for the Management of the Scientific and Technical Information inside the Network to standardise all the procedures related with this kind of information at the universities. http://www.webometrics.info/en/Americas/Caribbean. - The NETWORK programme has fomented the DevOps movement in Cuba. Two international workshops for software developers and system administrators, known as "DevOps days", were held in Cuba, in order to disseminate the application of techniques and good practices that reduce the barriers between developers and system administrators. These two events gathered around 200 (in total) specialists from all over Cuba and other countries like the USA, Puerto Rico and Belgium. Important software industries in Cuba are getting more and more involved in this movement. - The ABCD-deployment in Cuba's Higher Education Ministry, is just an example of the extent of some IT products developed in the framework of the NETWORK programme (ABCD, VIVO, DSPACE, DarkArchive, EsFacil, PoMCTI, PETICT). ABCDv3.0 is considered one of the key projects in the MES computerisation programme. ABCDv3.0, a system for library management, was first carried out as a successful pilot project deployed at UPR, UCI and UCLV (three universities belonging to NETWORK), and afterwards generalised to the rest of partner universities and the complete MES-system.

2.1.4. Impact

4.1. Academic Impact Score: **Good**	- Regarding the teaching of English, MES decided to create specialised English teaching Centres, which in turn were assisted methodologically by the staff members of the NETWORK programme (PETICT). This is another example of the presence, impact and involvement of the NETWORK programme in the development and implementation of national policies in Cuban universities. - The NETWORK programme facilitated the acquisition of the 'Face to Face' collection (more than twenty books, notebooks, brochures, multimedia, etc.). In addition to their usage for team members training, it has been conceived as a bibliographic source in all the universities of the

	country as part of the implementation of the new programme conceived by the MES for the teaching English through the language centres created in the universities, where a big part of the materials used for language teaching have mostly come from Flemish universities. - The Ministry of Higher Education adopted a new policy that included adapting the CEFRL (Common European Framework of Reference for Languages) for undergraduate and continuous education. The NETWORK programme and MES-developments are aligned in a common strategy for capacity building, supporting English language training centres, in topics regarding training and certification, guidelines, diagnostic tests, corpus linguistics and its use in ICT-related sciences, academic writing and scientific communication. About 300 GB of documents, applications, videos, audio recordings, and books, have been provided to Cuban universities for this initiative. - An important achievement that has been and still is supported by the NETWORK programme has been the development of computing capabilities to support scientific computing (HPC and Big Data). The HPC cluster installed at UCLV and supported by the NETWORK programme is more and more used not only by researchers from partner universities but also for other universities and research centres in Cuba. - A new experience for PhD formation and research was put into practice in synergy with the IUC programme of UO. A group of ten PhD students from UO are full-time enrolled in the UCLV PhD programme. They were incorporated as part of the second edition of the NETWORK PhD school. The same experience was extended to PhD students from four other Universities (Granma, Ciego de Avila, Las Tunas and Santi Spiritus). - Cuban academic staff and PhD students participation in scientific international congresses have encouraged the exchange with known international experts on ICT, and have promoted further collaborations in new project initiatives. The Joint PhDs have established a stronger collaboration between Flemish and Cuban research groups and have prepared specialists in new scientific lines of common interest.
4.2. Institutional Impact Score: **Excellent**	- The ICT Direction of the Ministry of Higher Education formally approved of the ABCD, DSpace and Moodle systems as the library, repositories and e-learning systems respectively, to be used in Cuban universities. It is just an example of how the NETWORK programme has influenced national policies regarding ICT, and in turn, ensures synergy and interoperability between projects, universities and the Higher Education system. - This synergy is more enhanced with the creation of the National Centre for Distance Education (CENED) at UCI. One of the main goals of this centre is to give technical hosting to the national e-learning programmes. To achieve this goal, the centre agreed to use MOODLE as VLE. - The exchange North-South also impacted partner universities by learning from the collaboration and incorporating new teaching approaches from Flanders, Belgium and Europe. It has caused an effect of open-mindedness, opening a new world of expectations.

	- These experiences acquired during the collaboration has been transmitted to other partner universities. A good example has been the creation of a project department (analogous to IRMO at VUB) at UCLV and UC in order to strengthen the support to the international collaboration. The goal of this new department is not only to strengthen international collaboration but also to support new initiatives to attract external funding, like national projects and possible spin-offs as result of the linkage university - industry. - Repository polices were also instituted at partner universities. This experience served as an example to other Cuban universities. As a result, two partner universities (UCLV and UPR) have been indexed in the Register of Open Access Repositories (ROAR) [Available at: http://roar.eprints.org], three partner universities (UCLV, UPR and University of Camaguey) in the Directory of Open Access Repositories (DOAR) [Available at: http://opendoar.org], and the remaining partner universities and many other Cuban universities from MES are positioned in the web ranking of repositories http://www.webometrics.info/en/Americas/Caribbean.
4.3. Development Impact Score: **Good**	- HPC / Big Data capacities for scientific computing are now available to the Cuban scientific community through three partner universities (UCI and UCLV in synergy with University of Oriente as a special partner). - These capacities can be used by researchers belonging to universities and other research centres, institutions and industries. But even more work should be done in their management and coordinated work among centres managing these infrastructures. The expertise of the support staff should be improved in the use of HPC technologies (efficiency and optimisation) with the use of state-of-the-art parallel computing techniques. Creating this culture in the country's researchers will be a new challenge. - In order to remedy the lack of infrastructure, a donation strategy has been implemented with Flemish institutions. Every year, additionally to the planned purchases of procurement belonging to the programme, different Flemish institutions (Ghent University, Leuven Hospital, Nexans and university colleges), donated hardware infrastructure (Servers, networking equipment, cabling and data centre materials), resulting in a yearly shipment of a container to Cuba and a distribution among partner universities. - Beyond the Higher Education Ministry, other institutions in Cuba have become stakeholders of the aforementioned products (MOODLE, DSPACE, ABCD3.0, EsFacil, among others) in Cuba, such as the Institute for Scientific and Technical Documentation and Information (IDICT) from the Science, Technology and Environment Ministry (CITMA), the National Centre of Medical Sciences Information (INFOMED) from the Public Health Ministry (MINSAP), and the Education Ministry (MINED); as well as representation of international organisations like the Cuban Office of UNESCO. All those organisations were interested in some part or all parts of the educational and research framework of the programme. Beside VLIR-UOS participation, external support has also come from

	outside Cuba. UNESCO-Paris, FAO-Rome, the training and collaborative work with universities in Germany, Spain and Italy and with institutes in countries like Italy, France and the United Kingdom. - Another significant example, also related to pedagogical schools, has been the participation of teachers and students from the special education department in a CTG ICT outreach project. This time focused on special education schools to offer children with disabilities (deaf, blind, autistic and mentally retarded) access to information technologies. It was perceived as a new world opened for them, with many possibilities that they did not know and that has undoubtedly caused a change in their lives. This initiative was in synergy with Handicap International, another actor of Belgian collaboration in Cuba.

2.1.5. Sustainability

5.1. Academic Sustainability Score: **Good**	- Thanks to the capacities created during the first phase (both human and infrastructure resources), partner universities will be able to attend future demands and to establish new collaborative and sustainable actions. - The second phase of the programme will continue developing and consolidating these capacities in order to ensure a successful impact of its results in the Cuban society. - Important cooperation relations reached with the industry sector should be consolidated and strengthened during the second phase. Fortunately, the NETWORK programme initiated the first active interaction with important industries such as BioCubaFarma, the Cuban electronics industry, and software industries like Desoft, Xetic and Datis. - The postgraduate academic programmes that took place during the first phase have been accredited internationally by AUIP (PhD and Master programmes on computer science) with successful results. The academic cooperation between North (Flemish universities of Belgium) and South, after two editions of the NETWORK doctoral school, opens and strengthens a way of further cooperation between Cuban and Flemish universities for future editions. It is expected to develop at least a third edition of the doctoral school during the second phase. Better graduates from futures editions will become potential candidates to apply for PhD scholarships in Flanders through VLIR-UOS or other funds.
5.2. Institutional Sustainability Score: **Good**	- The NETWORK programme has a sustainability strategy aimed at the industry sector. If it is successful, and the relationship between partner universities and the industry sector yields, spin-off projects could be developed, which could generate incentives making the actions of the NETWORK programme more sustainable at the end of phase 2. The opening of new international collaboration actions with other Flemish institutions (Thomas More), other actors of Belgian collaboration (Handicap International), European universities or research centres (University of Granada and Malaga in Spain, Jülich supercomputing centre in Germany, etc) would be other key factors for sustainability.

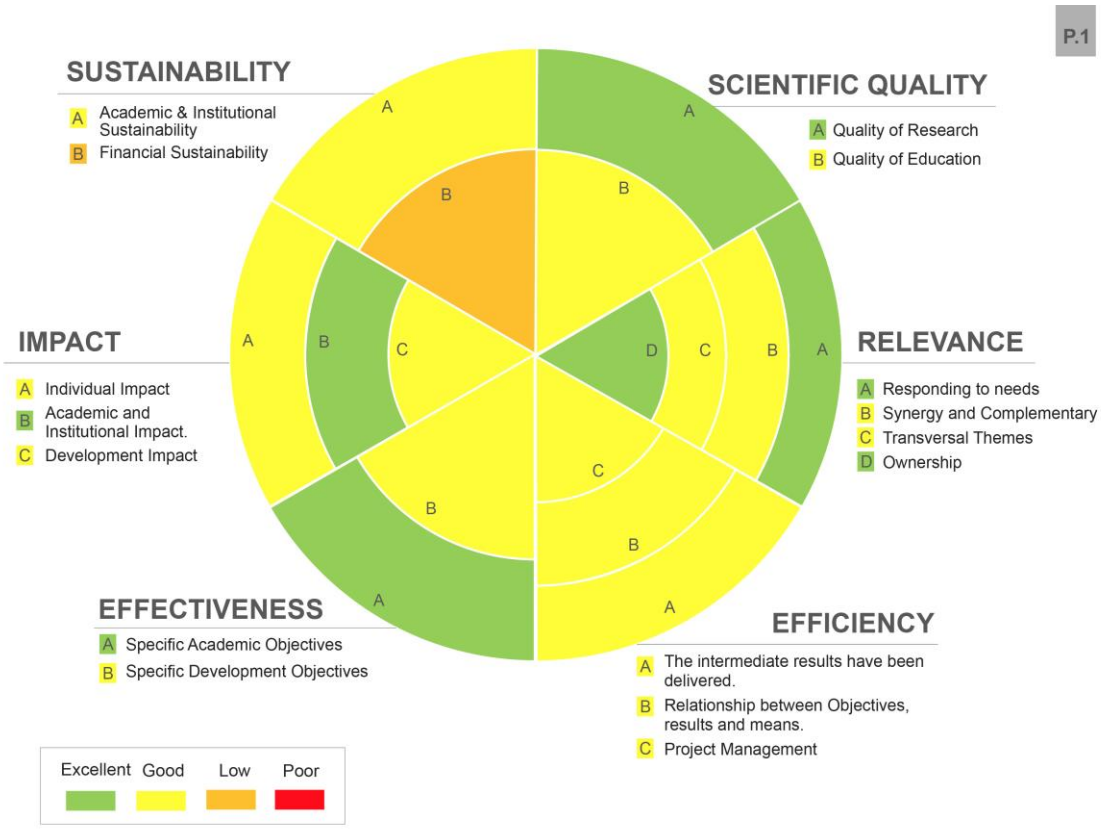
	- There are external factors that threaten the retention of young staff with a good level of expertise in the field of ICT. The demand abroad (both in Northern and Southern countries) of personnel trained in ICT is very tempting for our young graduates. The economic situation of the country and the modest salaries earned make that the ICT-related sciences staff leaves the universities for other sectors in Cuba or abroad as soon as they reach a certain degree of professional maturity. In this sense, the NETWORK programme tries to work with working teams or communities to guarantee the transfer of knowledge from the most experienced to the youngest that start. Cuban institutions should be able to provide incentives for retaining staff. It is a really difficult task. The NETWORK programme tries to keep the staff involved in new initiatives and programme activities, giving them a greater participation and leadership, especially the youngest ones. It is about taking advantage of individual capacities to encourage new collaborative actions where they can play a leading role.
P.5.3. Financial Sustainability Score: **Low**	- The programme has carried out a group of actions aimed to raise funds and achieve financial/economic sustainability. Significant collaboration agreements have been signed with the Cuban electronics industry, the INRH and the ETI- BioCubaFarma, with the aim of developing contractual actions of technology transfer of products and services developed within the framework of the NETWORK programme. - The deployment and support of the library management system ABCD 3.0 (developed in the framework of the programme) to all Cuban universities belonging to MES was contracted to one partner university (UCI). Its deployment in all universities of the MES-systems has already been completed, which undeniably will guarantee its sustainability and future development. Something similar is already agreed upon for the repository system using DSPACE already adopted by most of the country's universities. - During this phase I, several funding sources have complemented the initial budget of the action. Most of this funding was coming from donations mainly in ICT-infrastructure. - Evaluators may not confirm at the moment that the financial sustainability will be guaranteed because of different reasons. The most important one is that universities 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. Lack of regulations and fundraising culture should change to a system where departments and individuals may get incentives for establishing fruitful commercial activities with industry stakeholders.

2.2 Evaluation of the project level

2.2.1 P1. Research in ICT-related Sciences (RESICT)

The objective of the project is to establish a consolidated system of research and knowledge transfer in ICT, based on cooperation and interdisciplinary work.

The figure below summarises the scoring in each criterion for the RESICT project



SCIENTIFIC QUALITY

1.1. Quality of Research
 	
Score: **Excellent**
	- The research produced by this project is cutting edge, as it could be checked by the figures of the last five years (see graph about Evolution and Impact of P1 by University below).
	  ○ Articles in international peer reviewed journals
	  ○ Articles in national peer reviewed journals
	  ○ Conference proceedings
	  ○ Chapters in books, etc.
	- An important amount of these research outputs has been jointly produced by more than one Cuban university and also with the direct participation of Flemish researchers.
	- Evaluators may conclude that the project has strongly impacted the research activity in Computer Science and Informatics at country level.

1.2. Quality of Education
 	
Score: **Good**
	- The project has increased the quality of the academic programmes and this may also be substantiated with the quantity of accredited programmes on ICT in the network (several of them accredited as Excellence). Some examples are:
	  ○ PhD Program on Informatics and the Master Program on Computer Science of UCLV.
	  ○ Master Program in Project Management of UCI
	  ○ Master Program in Applied Mathematics and Informatics for management and Master Program in Computer Aided Design and Manufactory of UHO.
	  ○ Master Program on Applied Informatics
	This academic offer is firmly appreciated by stakeholders, and alumni easily get a job after their graduation. In fact, sometimes the retention of good students for the higher education sector/research is a difficult task. In the same way, participants in the programme have participated in other scholarship programmes, mainly connected with Flemish universities.

RELEVANCE	
2.1. Responding to needs Score: **Excellent**	- The project was formulated jointly by the Cuban partners and the Flemish partners, based on the fruitful experience of the former project. - The initiative brought a strong support from key stakeholders in this topic, both at the governmental and entrepreneurial level. - As a consequence, the project objectives are fully aligned with the needs of the country in this topic (ICT), and the increased cooperation of the Network has been disseminated in different provinces. - The project is responsive to changes in local priorities because the conceptualisation and its development depend on the active participation of the stakeholders. Joint projects between ICT-companies and universities provide the main example of that.
2.2. Synergy and Complementary	- The Network is focused on taking advantage of the synergies, avoiding duplication of work and provoking complementary activities.

Score: **Good**	- Evaluators identified how, in each project, the staff created the conditions for those synergies and the fruitful results obtained. - There are also some interesting synergies with the IUC project, that have been appropriately exploited (PhDs).
2.3. Transversal Themes (gender, environment and D4D) Score: **Good**	See 1.4
2.4 Ownership Score: **Excellent**	- Ownership in this project is very high, at institutional level and at network level. - Stakeholders, especially MES and ICT companies, show substantial support and ownership in the initiative, as they perceive it as crucial for their interests. - The fact that this sector (ICT) is perceived as a promising opportunity, similar to biotechnology, by the different stakeholders, contribute to the joint effort.

EFFICIENCY	
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 (also taking into account that UCLV has extensive experience in formulating indicators for this kind of initiatives). - All the indicators have been accomplished and evidence of the quality on some indicators could be found.
3.2. Relationship between Objectives, results and means Score: **Good**	- Means/inputs are justifiable in the P1 - Outputs clearly contribute to the project objectives - Delays did not affect to the work plan substantially - Ratio cost (lower cost)/benefit is positive
3.3. Project Management Score: **Good**	- The management manual is well-developed and applied at project and project level. - P1 benefits from the wide experience of the coordinators from both sides, which clearly contributed to the good management of the initiative. - Monitoring and reporting system seems to work properly - Good cooperation and communication within the project

EFFECTIVENESS	
4.1. Specific Academic Objectives Score: **Excellent**	- As described before, the progress of P1 has contributed to the fact that the objectives have been properly achieved. - The quality of the outputs is high and has international standards (intentional peer reviewed articles). - Evaluators found consistent evidence that the action supports the implementation or development or change of partners' policy/actions, mainly with the new/improved academic offer (and the accreditation processes). - As consequence changes in organisational capacity (skills, structures, resources) could be identified. - The indicators for the specific academic objective have been achieved.
4.2. Specific Development Objectives Score: **Good**	- The quality of outputs is satisfactory and contributed to the development of partners' policy/actions. - Those policies support a more proactive relationship with ICT-companies, which, in some universities (UCLV), has been very effective.

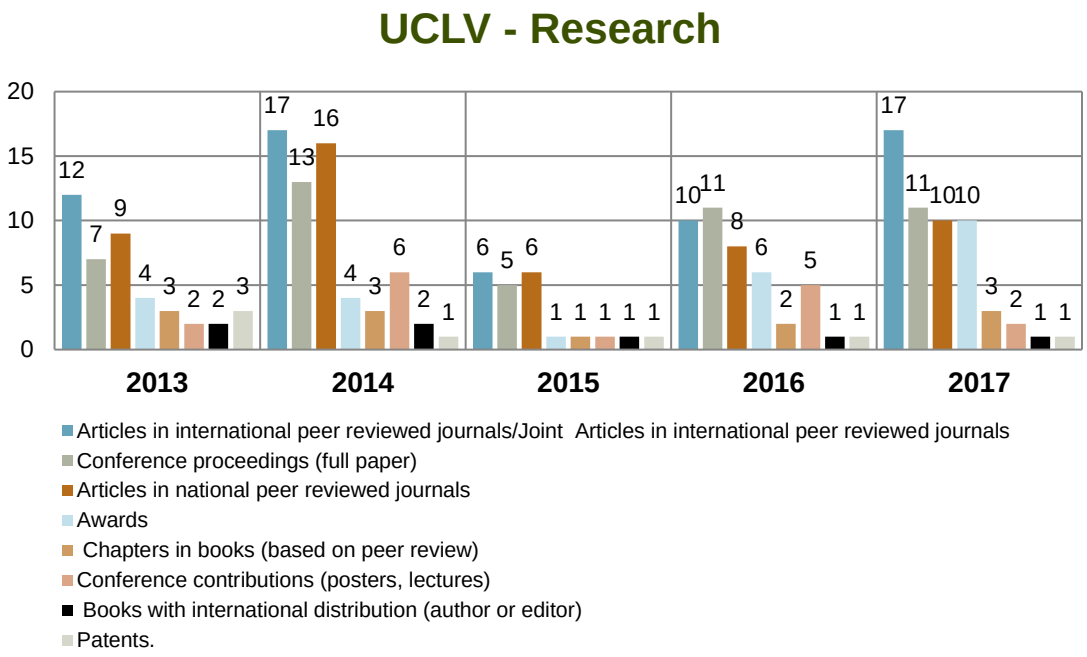
IMPACT	
5.1. Individual Impact Score: **Good**	See 2.3
5.2. Academic and Institutional Impact Score: **Excellent**	- The main academic and institutional impact of this project is focused on the establishment/improvement of ICT-programmes and the active cooperation with relevant actors of the ICT-sector. - This impact is clearly improving the academic performance of the participating universities, which is already visible at the institutional indicators.
5.3. Development Impact (Impact on Society) Score: **Good**	- This project contributed to envisage the role of the university as development actor in the field of ICT. - Specific examples of this important role may be found in 2.4 (Analysis of impact at Societal Level – Case studies).

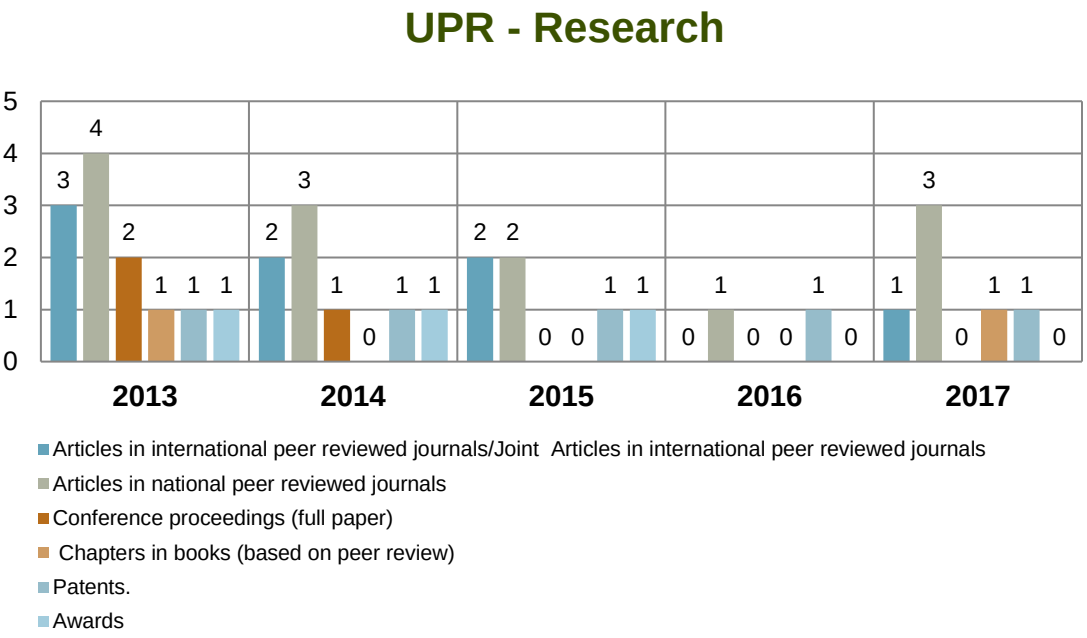
SUSTAINABILITY	
6.1. Academic & Institutional Sustainability Score: **Good**	- The academic sustainability of the different initiatives is supported by an obvious institutional commitment which evaluators could test in each university of the network. - The activities developed with local stakeholders have a clear support that may foresee a sustainability in the future via joint projects, additional funding, etc. - The trained staff is committed in the project activities and will continue to work in and impact the institution.
6.2. Financial Sustainability Score: **Low**	- Some universities of P1 (mainly UCLV) have established some fruitful relationships with ICT-companies, which may contribute to the future sustainability of the action. - However, evaluators may not confirm that the financial sustainability will be guaranteed because of different reasons. The most important one is that Cuban universities 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. 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), should be promoted.

Table. Beneficiaries & stakeholders P1 RESICT

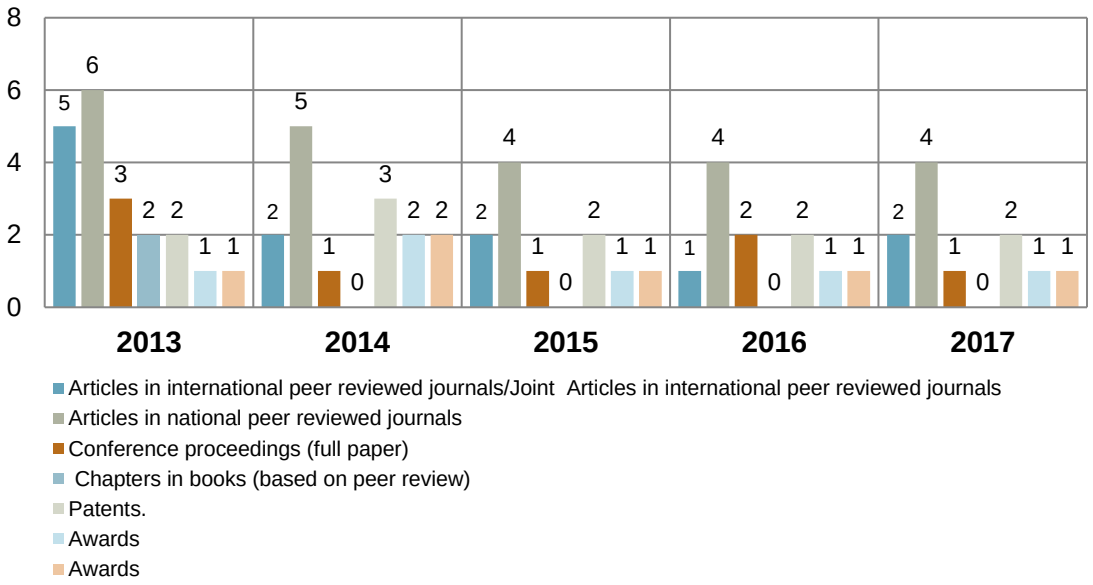
	LOCAL		REGIONAL / NATIONAL	
	Direct	Indirect	Direct	Indirect
INDIVIDUAL	PhD Students Teaching Staff from the Network	Bachelor Students MSc Students from the Network	PhD Students outside the Network	Bachelor Students MSc Students outside the Network
ORGANIsATIONAL	ICT or related departments at UCLV UPR UCI UHo UC	Other departments / faculties at the Network universities	Universidad de Las Tunas Universidad de Santi Spiritus	Cuban Higher Education system
SOCIETAL	MES Software enterprises from Pinar del Río, Habana, Villa Clara, Camaguey & Holguín Train Company (Camagüey) Biotechnology Center (Camaguey= Ataxia Center (Holguín) Empresa CEDAI Villa Clara	Patients of Hospital Software users/customers	Etecsa Lacetel Ministerio de Comunicaciones Ministerio de Salud Ministerio de Turismo Ministerio de Energía y Minas	Cuban society in general

Evolution and Impact of P1 by University

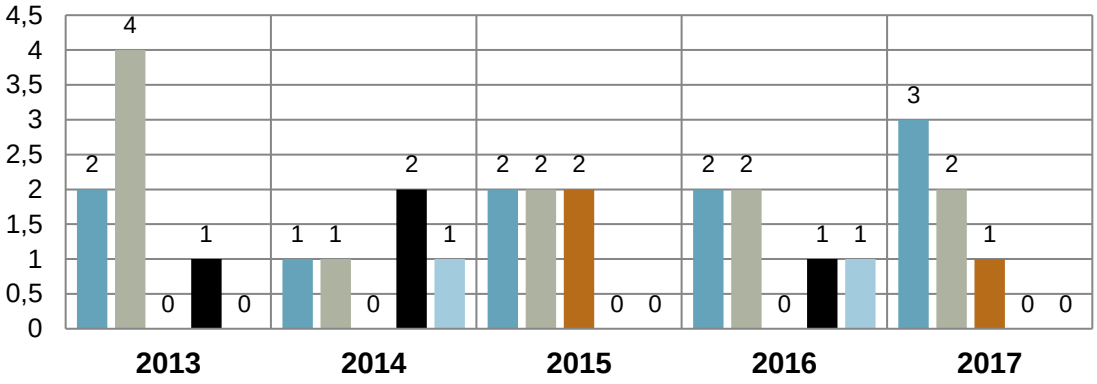


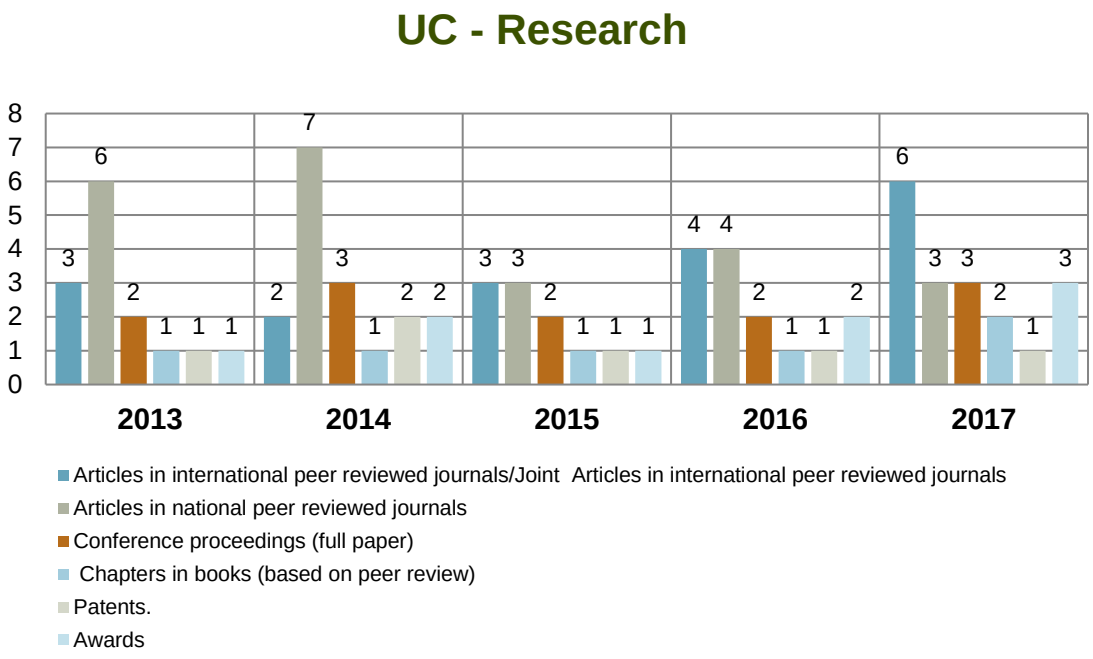


UCI - Research



UHO - Research



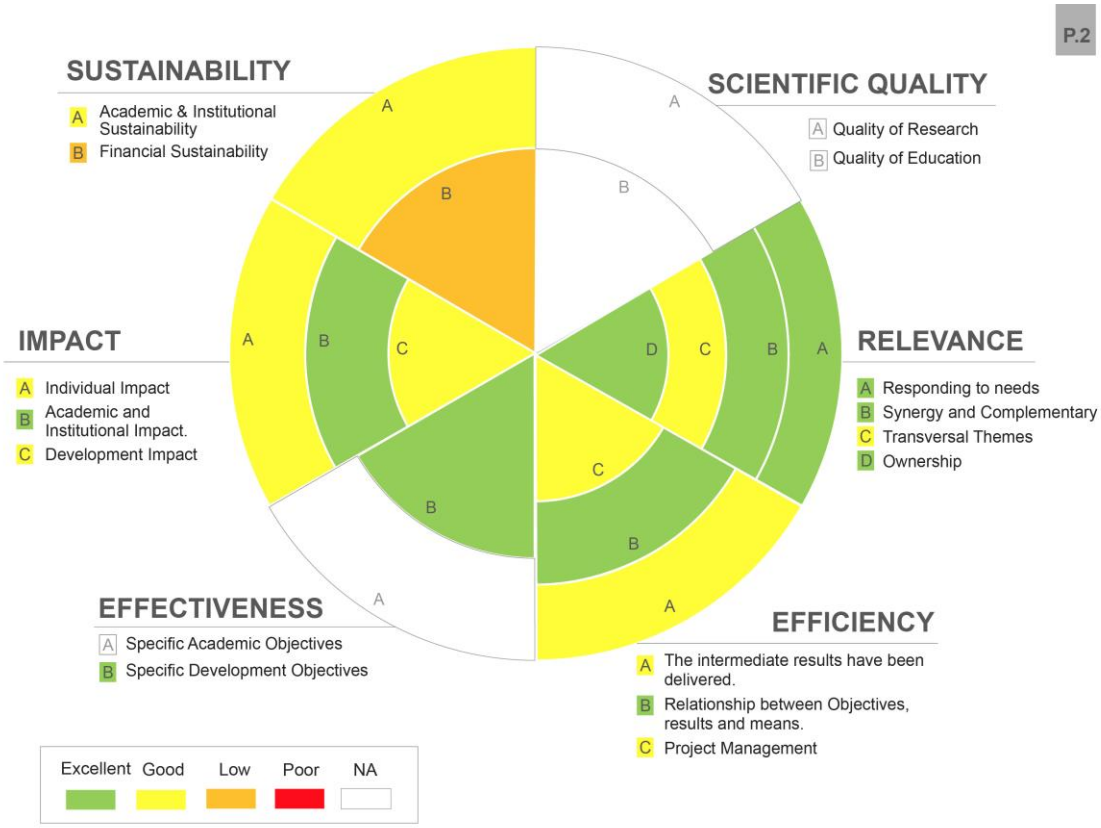


2.2.2 P2. Open ICT Systems and Management (ICTSYS)

The specific objectives of this project are:

1. Building the necessary capacity at five partner universities to administer, develop and implement the state-of-the-art ICT-services, systems and applications by using free software.
2. Putting into practice the principle of 'train the trainer' to share the knowledge and expertise obtained in the framework of the network to the rest of the High Education System.
3. Improving and optimising the ICT-infrastructure in partner universities through a campus network and ICT-services working in a stable and proper manner to support all researching and academic activities of the Network.
4. Improving and optimising the interconnectivity and communication services between partner universities involved in the network, and the Internet access with the use of bandwidth management and optimisation techniques.
5. Migrating platforms of university's management, IT-services, and academics-related activities to free software.
6. Developing an open collaborative platform integrating e-learning systems, messages and media services.

The figure below summarises the scoring in each criterion for the ICTSYS project



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

RELEVANCE	
2.1. Responding to needs Score: **Excellent**	- Process of project formulation and LFM were developed taking advantage of the previous experience of the UCLV IUC programme. Thus, it was easier for the project leaders to fix the scope of the project. As a consequence, the chosen approaches, methodologies, partnerships

	and implementation modalities were fully relevant for the Cuban context. - As explained before, ICT is one of the priorities for the Cuban government, so the links with policy documents is clear, and the alignment evident. - MES and the participating universities also contributed in the planning of the objectives; the process of formulating project objectives was efficient. - The merger with the universities of sports and education was not initially planned in the project, so it became a big opportunity for the project to response to changes in the local priorities. This was done successfully, as it could be tested in the relevant indicators.
2.2. Synergy and Complementary Score: **Excellent**	- The Network took advantage successfully of the synergies with other programmes funded by VLIR-UOS and/or other donors. The important donations from some universities (e.g. Ghent University) complemented the initial equipment and increased the impact of the activities. - As this initiative is basically improving and optimising ICT-infrastructure in partner universities, it provoked direct impact within the rest of the projects by facilitating all aspects related with connectivity, IT-services, integration of platforms, etc.
2.3. Transversal Themes (gender, environment and D4D) Score: **Good**	See 1.4
2.4 Ownership Score: **Excellent**	- The participating universities contributed and supported the ICT modernisation by building and furnishing several spaces (e.g. Datacenter), plus by purchasing other needed equipment (electronic generators, etc.). - The Network participants have taken full ownership of the project, as all the deliverables and developments accomplished are deployed directly in their campuses, and there is huge interest in and commitment to the continuation of offering these services. - All key stakeholders, including the hierarchy of each university, demonstrated effective commitment.

EFFICIENCY	
3.1. The intermediate results have been delivered. Score: **Good**	- KRA`s and indicators are good, with some pending issues to be finished during the current year (2018). - Indicators for the whole period (five years) are impressive and provide the background to understand the great changes that participating universities have achieved with regards to ICT-infrastructure (see Evolution and Impact of P2 by University below).

3.2. Relationship between Objectives, results and means Score: **Excellent**	- The means/inputs are justifiable and are carefully thought through solutions for the defined outputs. - The main limitations have been: 1) the inability to replace some services and applications that have no equivalent in free and open solutions; 2) the difficulties in acquiring equipment in a fast and viable way. - All purchases have been made in Belgium and sent to Cuba, and although this is a successful solution for the problem described before, it is a long and bureaucratic process. - Considering this background, the way the network has planned and properly implemented the activities could be considered as excellent.
3.3. Project Management Score: **Good**	- Project management has been properly coordinated by UCLV with extensive support from the rest of the participants in the Network. - Considering the fact that ICT-infrastructure needs a lot of planning, we may also conclude that the project has been adequately monitored by local and Flemish partners. Monitoring and reporting systems were in place, and reporting worked on time. Communication within the project has been good.

EFFECTIVENESS	
4.1. Specific Academic Objectives Score: **NA**	NA

4.2. Specific Development Objectives
 	
Score: **Excellent**
	- Expected outputs have been properly achieved, with high quality and direct impact on stakeholders
	- Evaluator found evidence of the impact of this project in:
	  - Network universities' ICT policies (e.g. internal rules promoting and regulating Internet access).
	  - Network universities' organisational capacity with regards to skills and structures in this area (for instance, changes in the structure and new services created, see Evolution and Impact of P2 by University, below).

IMPACT	
5.1. Individual Impact Score: **Good**	See 2.3
5.2. Academic and Institutional Impact Score: **Excellent**	- Changes produced by this project are focused on the institutional level: ○ The capacity built at partner universities to provide ICT-services.

	○ The improved and optimised ICT-infrastructure and interconnectivity. ○ The development of an open collaborative platform. - Those changes produced direct impact on management (policies) and behaviour at departmental/university level.
5.3. Development Impact (Impact on Society) Score: **Good**	- The project has raised interest of other stakeholders, who have contacted the project leader with specific interest in several services (training, consultancy). - There are some examples of activities developed with local stakeholders, contributing to the economic and social development (see 2.4 Case studies). - The project contributed to increased visibility of the network universities as development actors.

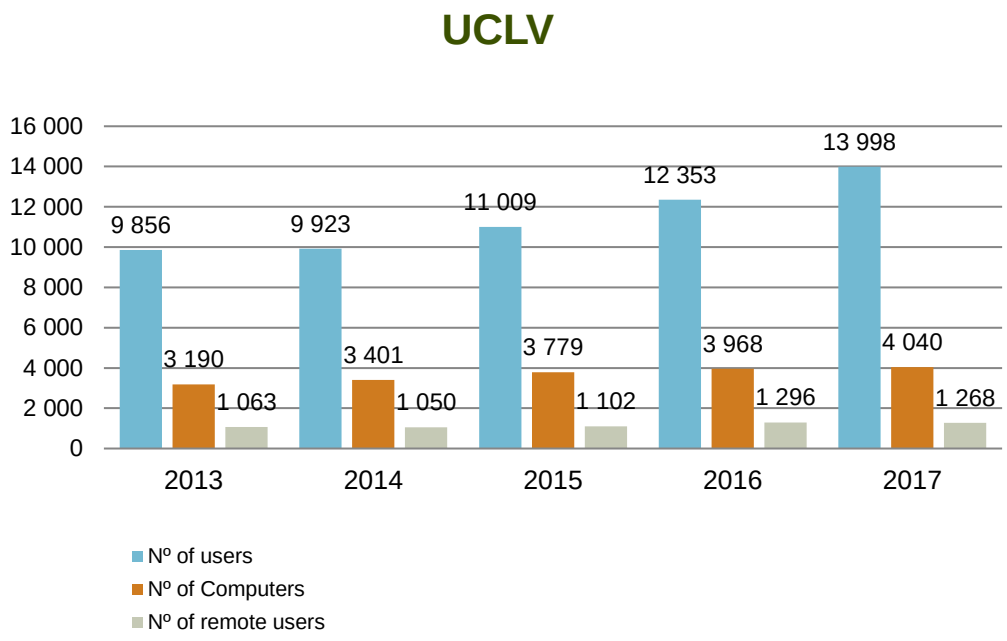
SUSTAINABILITY	
6.1. Academic & Institutional Sustainability Score: **Good**	- As described before, ICT-development is a national and institutional priority. The inputs of the project contribute to the academic and institutional sustainability of the project. - The activities developed with local stakeholders contribute to the economic and social development. - Although staff from the ICT-department showed their full commitment to the initiative, and the evaluators could find evidence in this direction, several members of the team (mainly in UCLV) left the project (either for changing job at national level – governmental enterprises – or international – US). - Policies for Staff retention should be promoted
6.2. Financial Sustainability Score: **Low**	- ICT equipment for universities is expensive and is affected by obsolescence. - Evaluators confirm that this project has planned several activities for the next period with the aim of being self-sustainable. - However, evaluators may not confirm that the financial sustainability will be guaranteed. Structural changes are needed, in order to facilitate that departments and faculties may commercialise their services.

Table. Beneficiaries & stakeholders P2 ICTSYS

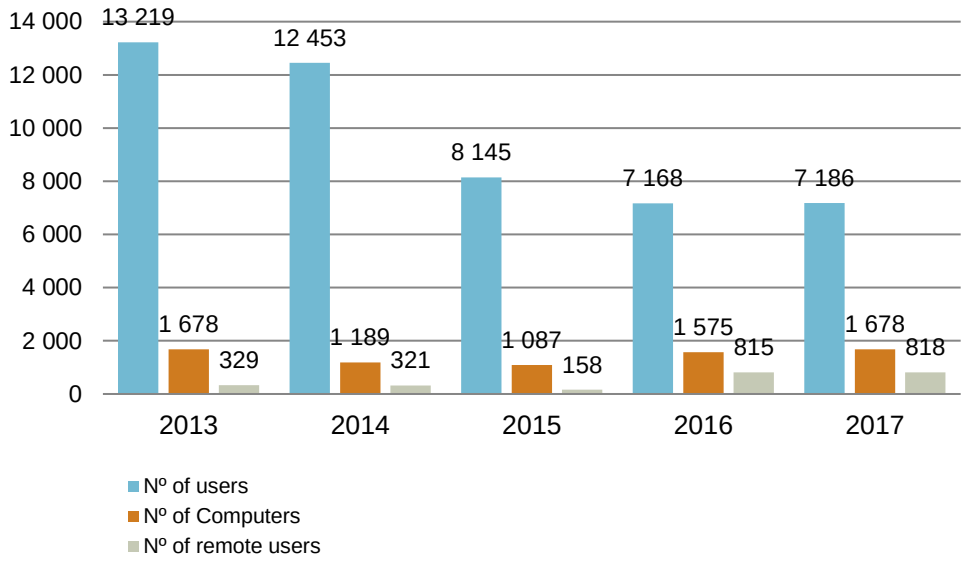
	LOCAL		**REGIONAL / NATIONAL**	
	Direct	Indirect	Direct	Indirect
INDIVIDUAL	Trainees Admins Staff Network Admins Developers	University Community (Network universities)	Network Admins Developers from other Universities	ICT Staff University Community (MES universities)

	High performance Students from the Network			
ORGANIsATIONAL	ICT or related departments at UCLV UPR UCI UHo UC	Other departments / faculties at the Network universities	Universidad de Las Tunas Universidad de Santi Spiritus	Cuban Higher Education system RedUniv members
SOCIETAL	MES Students from Special Schools (see Case Study) HPC users	Docker Community	ICT department Hydraulic Ministry BioCubaFarma	Comunidad Devops Cuba Software companies: Datys, DSOFT y XETIC Etecsa

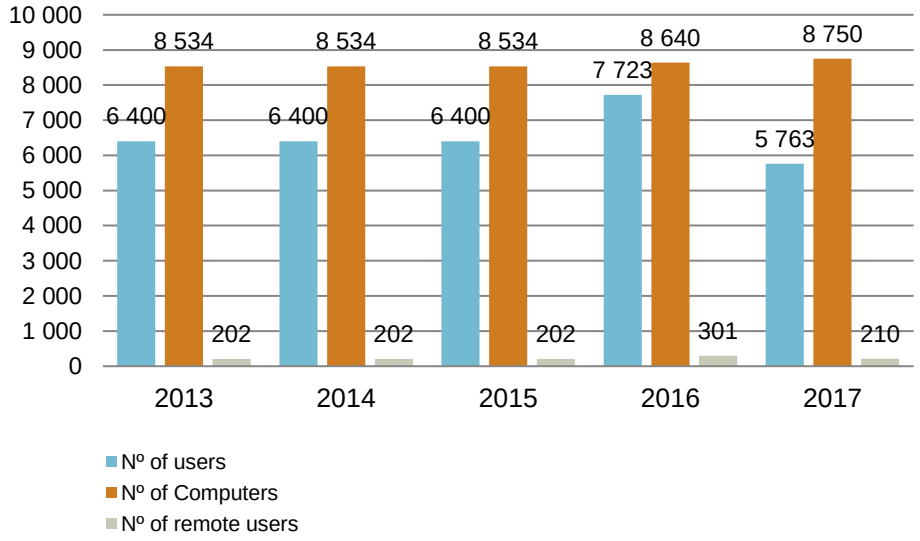
Evolution and impact of P2 by university: Users, computers and remote users

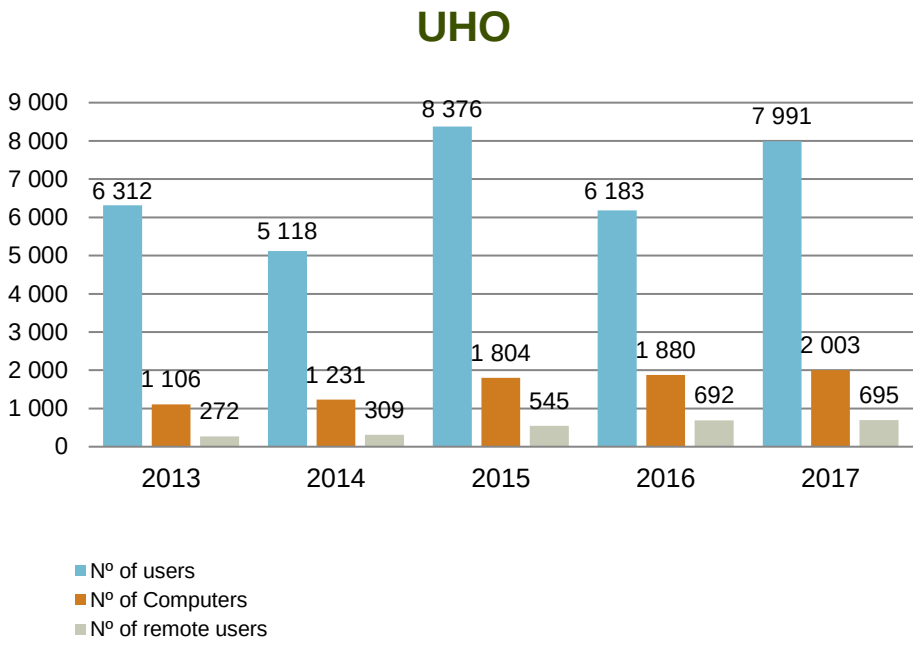


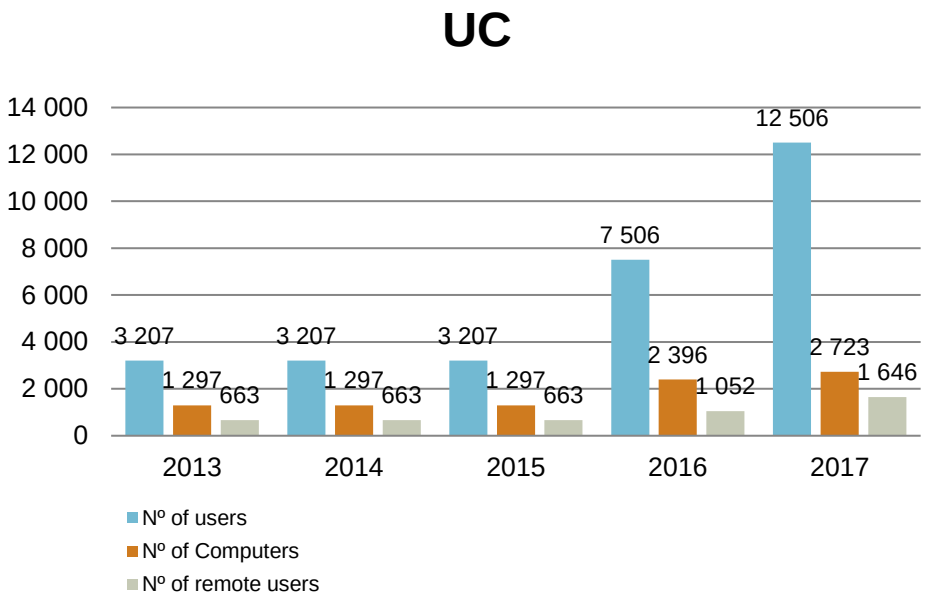
UPR


14 000
12 000
10 000
8 000
6 000
4 000
2 000
0
13 219
1 678
329
12 453
1 189
321
8 145
1 087
158
7 168
1 575
815
7 186
1 678
818
2013
2014
2015
2016
2017
Nº of users
Nº of Computers
Nº of remote users

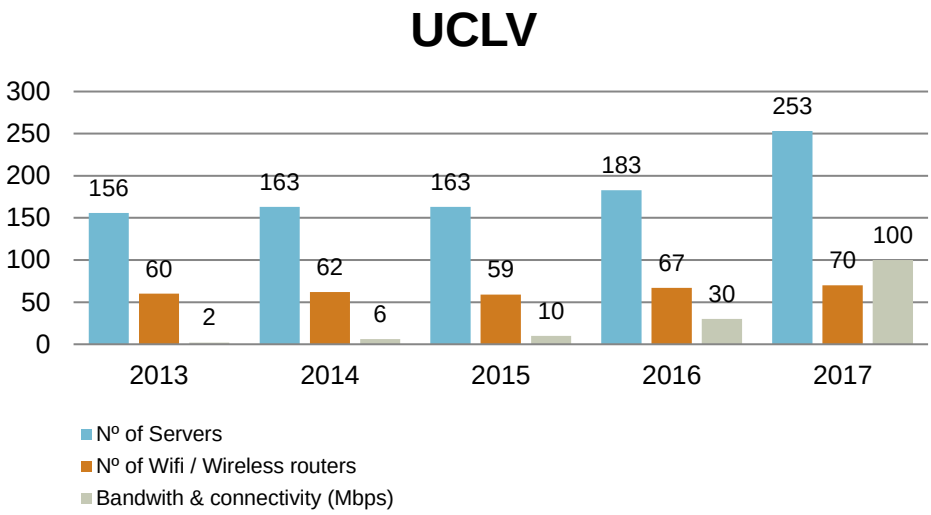
UCI

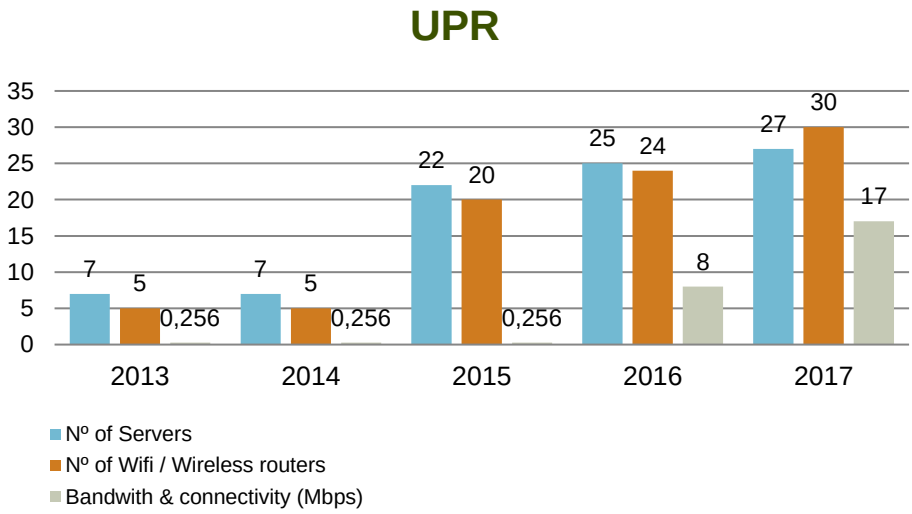

10 000
9 000
8 000
7 000
6 000
5 000
4 000
3 000
2 000
1 000
0
6 400
8 534
202
6 400
8 534
202
6 400
8 534
202
7 723
8 640
301
5 763
8 750
210
2013
2014
2015
2016
2017
Nº of users
Nº of Computers
Nº of remote users



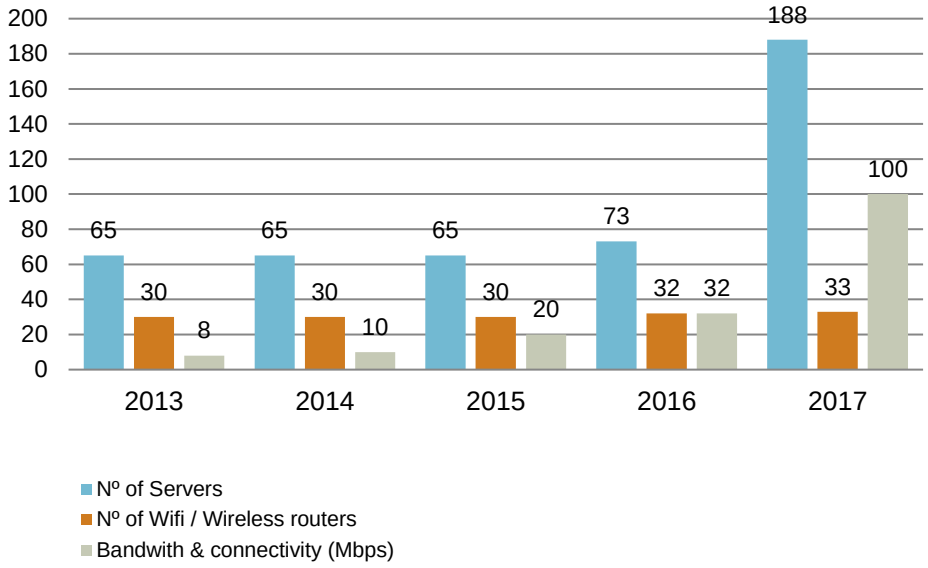


Evolution and impact of P2 by University: Servers, Wi-fi / Wireless Routers and Bandwidth & Connectivity


UCLV
300
250
200
150
100
50
0
156
60
2
163
62
6
163
59
10
183
67
30
253
70
100
2013
2014
2015
2016
2017
Nº of Servers
Nº of Wifi / Wireless routers
Bandwith & connectivity (Mbps)


UPR
35
30
25
20
15
10
5
0
7
5
0,256
7
5
0,256
22
20
0,256
25
24
8
27
30
17
2013
2014
2015
2016
2017
Nº of Servers
Nº of Wifi / Wireless routers
Bandwith & connectivity (Mbps)

UCI


200
180
160
140
120
100
80
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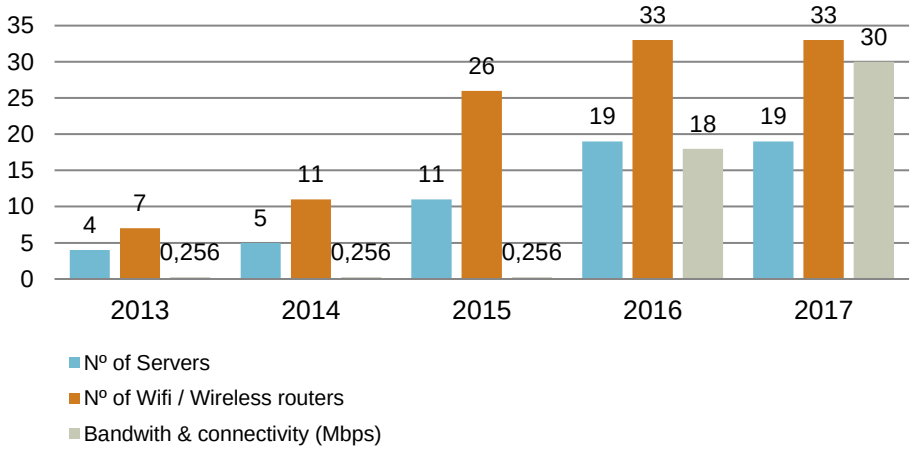
20
0
65
30
8
65
30
10
65
30
20
73
32
32
188
33
100
2013
2014
2015
2016
2017
Nº of Servers
Nº of Wifi / Wireless routers
Bandwith & connectivity (Mbps)

UHO


35
30
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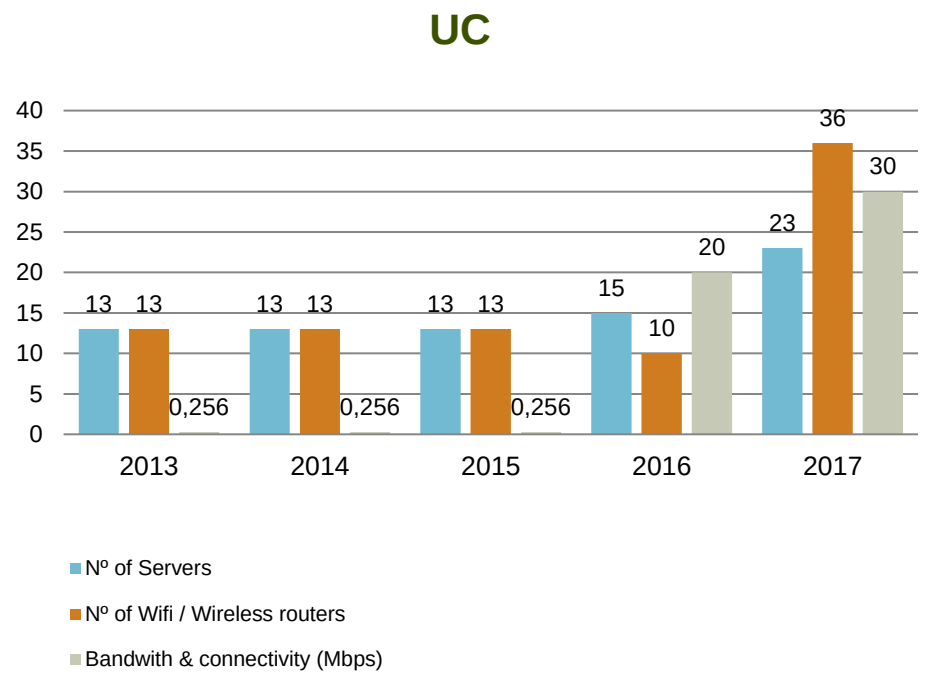
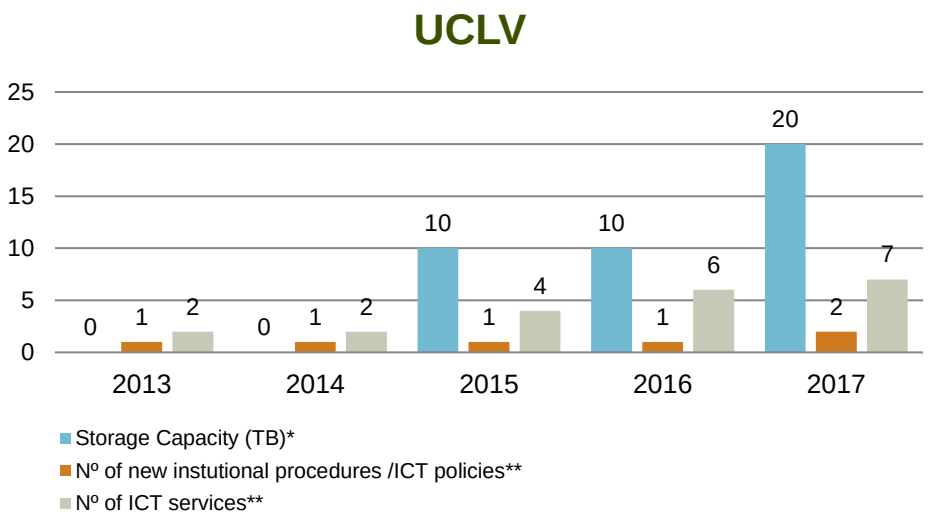
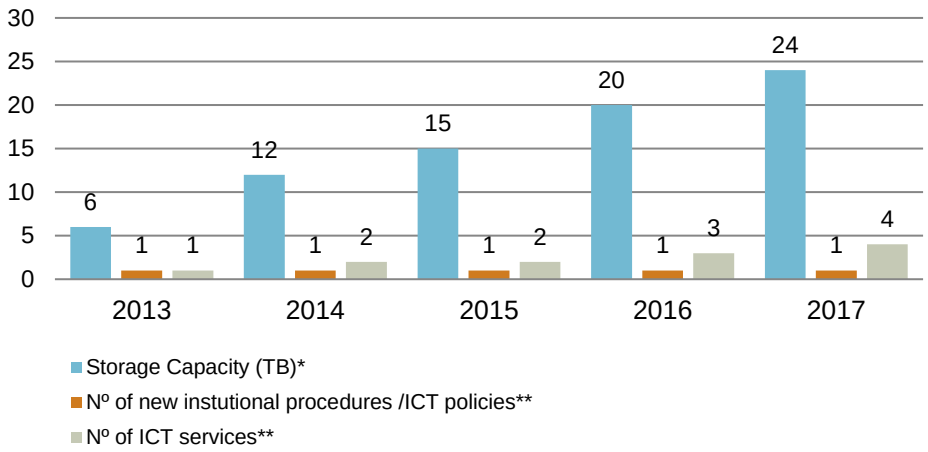
20
15
10
5
0
4
7
0,256
5
11
0,256
11
26
0,256
19
33
18
19
33
30
2013
2014
2015
2016
2017
Nº of Servers
Nº of Wifi / Wireless routers
Bandwith & connectivity (Mbps)



Evolution and impact of P2 by university: storage capacity, new institutional procedures/ICT-policies, ICT-services



UPR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20
15
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5
0
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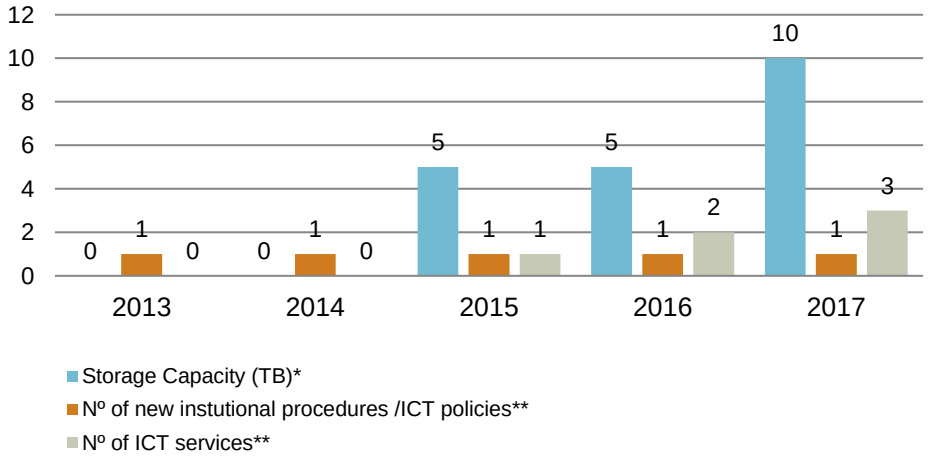
1
12
1
2
15
1
2
20
1
3
24
1
4
2013
2014
2015
2016
2017
Storage Capacity (TB)*
Nº of new instutional procedures /ICT policies**
Nº of ICT services**

UCI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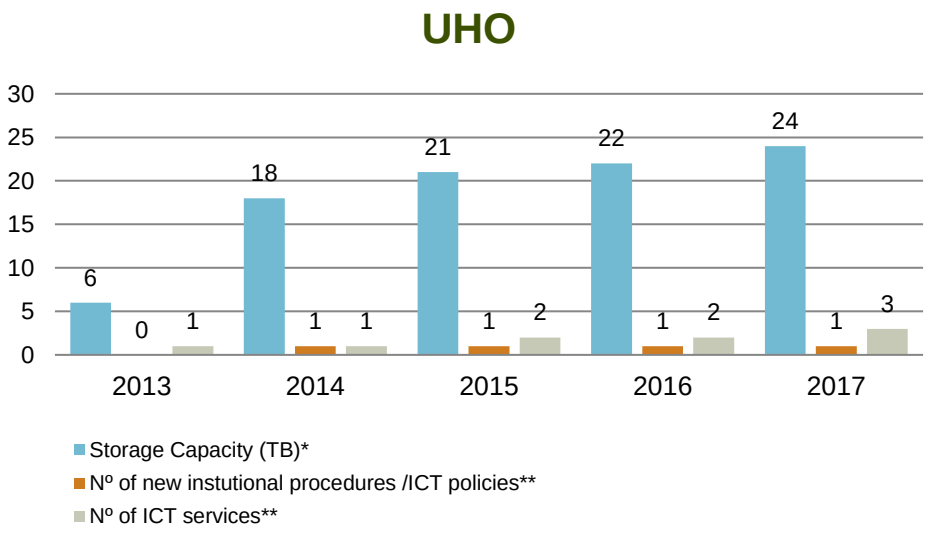
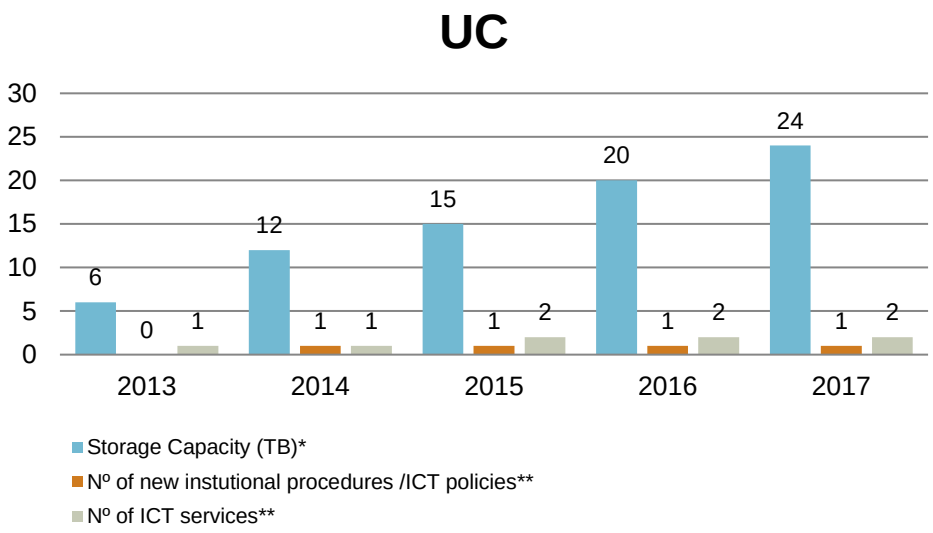
10
8
6
4
2
0
0
1
0
0
1
0
5
1
1
5
1
2
10
1
3
2013
2014
2015
2016
2017
Storage Capacity (TB)*
Nº of new instutional procedures /ICT policies**
Nº of ICT services**


UHO
30
25
20
15
10
5
0
6
0
1
18
1
1
21
1
2
22
1
2
24
1
3
2013
2014
2015
2016
2017
Storage Capacity (TB)*
Nº of new instutional procedures /ICT policies**
Nº of ICT services**


UC
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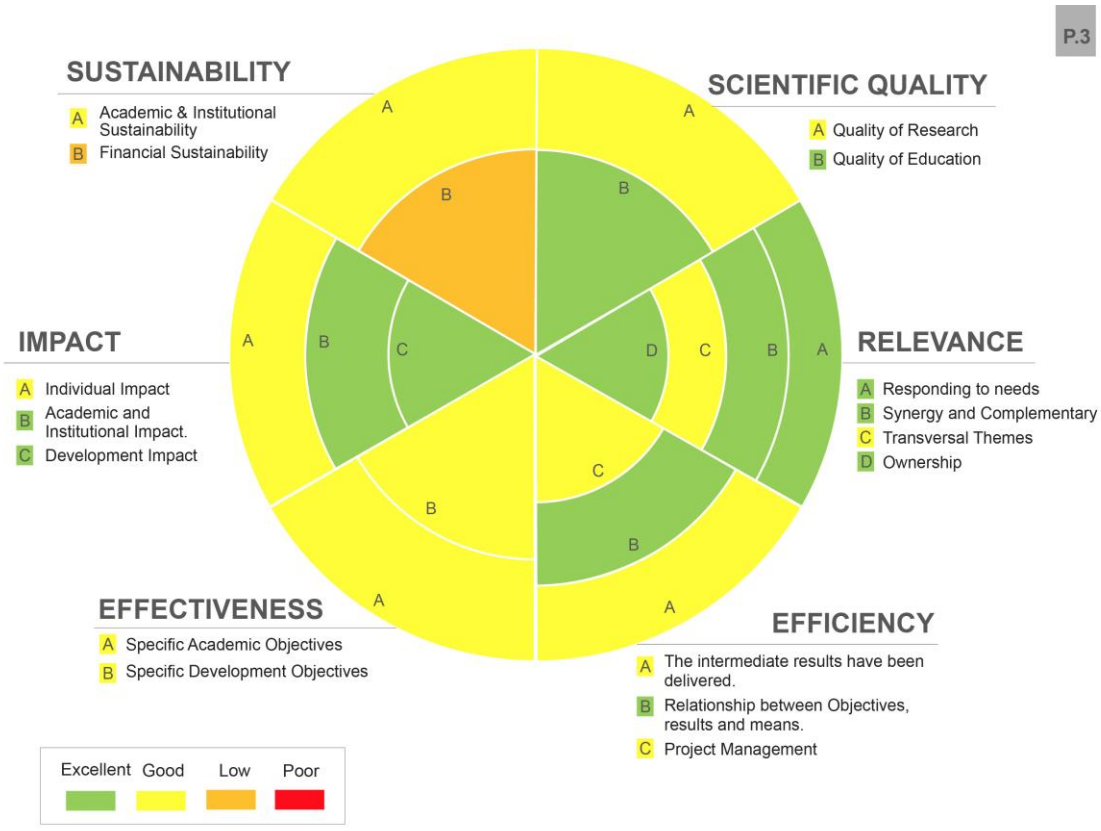
1
2
2013
2014
2015
2016
2017
Storage Capacity (TB)*
Nº of new instutional procedures /ICT policies**
Nº of ICT services**

2.2.3 P3 ICT in support of Educational Processes and the Knowledge Management in Higher Education (ELINF)

The Specific Academic Objectives of this project were:

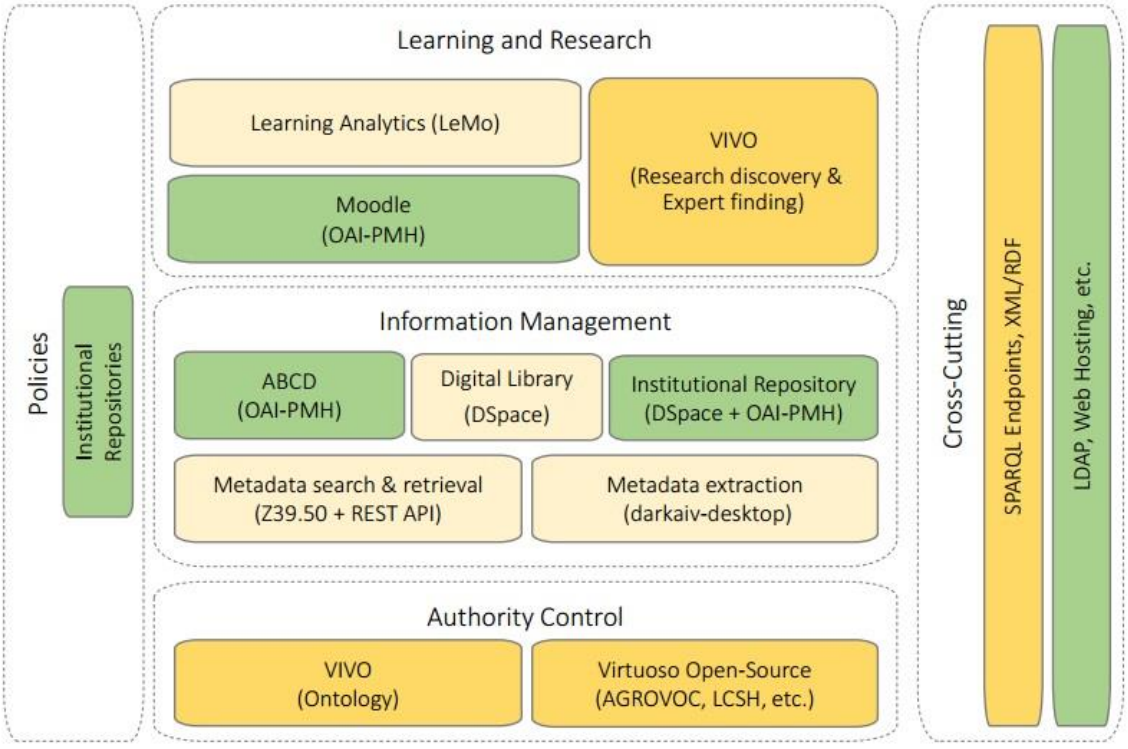
1. To enhance the capacity of partner universities to design and apply appropriate and sustainable Information and Communication Technologies (ICT) facilities for educational purposes.
2. To enhance the capacity of partner universities for a better management of the information in learning and research.

The Specific Developmental Objective was to develop a national platform that support educational and information services for all Cuban universities. Contributing to the priorities of Cuban society.



SCIENTIFIC QUALITY	
1.1. Quality of Research Score: **Good**	- Quality of research in the framework of P3 is good. 32 technical papers about the application of ICT for education and research were jointly written by Cuban and Flemish project members (seven in international reviewed journals, six in national reviewed journals, eighteen conferences proceedings, and one conference abstract). - Different stakeholders have been successfully involved, as documented in 2.4 (Analysis of Impact at Society Level – Case Studies).
1.2. Quality of Education Score: **Excellent**	- New educational practices coming from P3 are cutting edge and fully relevant to the Cuban Higher Education System. Impressive figures have been accomplished with regards to the application and institutionalization of Moodle at country level (see below Evolution and Impact of P3 with regards Moodle use by University). - Full involvement of Southern Stakeholders, including not only universities but especially the policy level (MES).

Concrete realisation of the ELINF Technical Reference Model

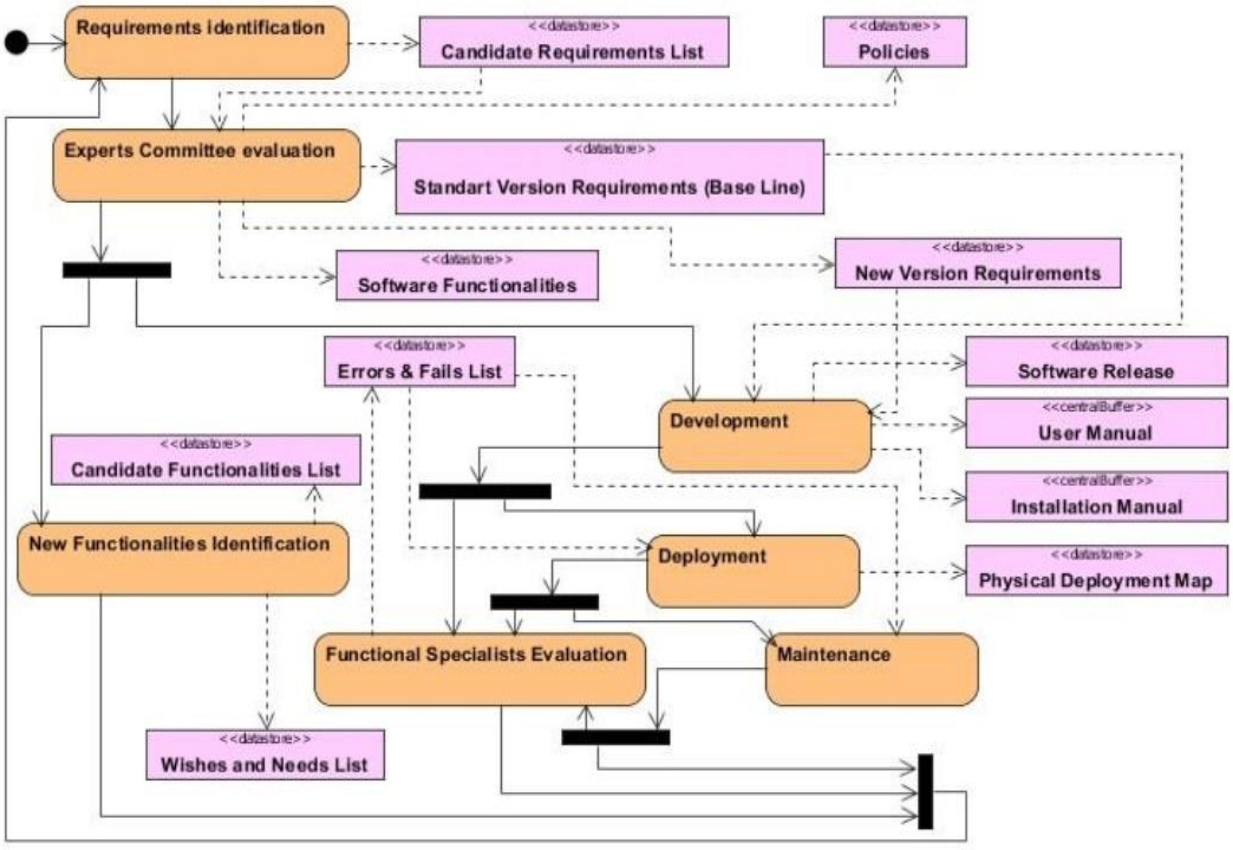


RELEVANCE	
2.1. Responding to needs Score: **Excellent**	- Process of project formulation took advantage of the UCLV experience in the former IUC-project, high interest from Cuban universities and MES and expertise from Flemish partners. - Evaluators found evidence of links between the outputs of the project and policies at institutional and national level, which shows ful alignment with the country priorities in this area. - Demonstrated links with policy documents. - P3 was responsive to changes in the local priorities, as shown during the merge of universities.
2.2. Synergy and Complementary Score: **Excellent**	- Synergies with other projects and institutional/national initiatives have been properly assured, based on the fact that the project provides platforms supporting educational and information services for all Cuban universities. - The complementary approach with other initiatives in this area could be also considered excellent.
2.3. Transversal Themes (gender, environment and D4D) Score: **Good**	See 1.4
2.4 Ownership Score: **Excellent**	- High ownership achieved, at all different levels (departmental, institutional, network, country level). - MES shows substantial support and ownership in the initiative, as they perceive it as crucial to their interests. Other stakeholders (see case studies) start collaborating with universities to take advantage of the outputs created. - The country strategy with regards to ICT will promote more collaborations and increased ownership in the near future.

EFFICIENCY	
3.1. The intermediate results have been delivered Score: **Good**	- KRs and indicators are SMART and provide enough information about the accomplishment of the different targets. - The quality of some outputs is also perceived by comparison with international or national standards (peer review journals, etc.).
3.2. Relationship between Objectives, results and means	- The means/inputs are justifiable and are correctly considered for the defined outputs. Some of the most relevant achievements are: ○ All the partner universities use MOODLE as a Virtual Learning Environment platform to offer their academic courses, supporting the face-to-face model as well as the distance educational model.

Score: **Excellent**	○ There is a Digital Repository [working mainly with DSPACE and VIVO] national development team with members from all the partner universities and coordinated by the UCI, that supports the virtual research platforms. ○ All the libraries of the partner universities share a network of information management supported by ABCD. A new version adapted to Cuba was developed and shared also with the international ABCD community (ABCD 3.0), supported in Java programming language and J-ISIS database technologies. This version is also installed in all the institutions of the Cuban Higher Education Ministry.
3.3. Project Management Score: **Good**	- The Cuban project leader of the ELINF project has changed twice. However, at the moment, the UCI coordinator is doing a good job, and the local coordinators have created an efficient team. - Also, the Flemish coordinator seems to adequately monitor the project with the usual VLIR-UOS reporting system and constant communication.

Software Development Workflow for the ELINF project.



EFFECTIVENESS	
P.4.1. Specific Academic Objectives Score: **Good**	- Most of the progress indicators with regards to academic objectives have been successfully achieved or are close to being achieved. - Besides the development of platforms, articles produced or specific trainings for staff, one of the most important outputs is that all the partner universities share a unique system of policies for the development of the courses and educational materials and for the evaluation of the quality indicators, through the National Network of Educational Technology. - The main missing indicator is the Master of Science degree programme about New Technologies for Education, because the change or disappearance of some of the universities organisational structures (at UCLV).
P.4.2. Specific Development Objectives Score: **Good**	- The specific development objective of P3 is to develop a national platform that supports educational and information services for all Cuban universities. Contributing to the priorities of Cuban society. - The activities were affected by two main factors: 1) the most important problems the universities were facing before the conception of the Network Partner Program; 2) the weak technological situation (staff knowledge & background, infrastructure and software & tools development) at the beginning of the project. - However, the effectiveness could be considered as good, thanks to the joint effort of all participants.

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

P.5.2. Academic and Institutional Impact
 	
Score: **Excellent**
	- Changes produced by this project are clear either at institutional or at national level. The most relevant impacts are:
	  ○ The project produced a software development tool (ABCD) that is reused in all Cuban universities under MES and can also be relevant in the future for existing ABCD users.
	  ○ The interoperability and integration of the different platforms for a virtual research and education network has been explored and is ready to be realised.
	  ○ English teaching has become a national policy.
	- Those changes produced direct impact on management (policies) and behaviour at departmental/university/country level.

P.5.3. Development Impact (Impact on Society)	- There are several examples (see 2.3 Analysis of Impact at Society Level – Case Studies) of fruitful collaboration between the project and other stakeholders.

Score: **Excellent**	- MES would be the most important one, because of its key role in disseminating and institutionalising the results of the project, but there are also other stakeholders at regional level.

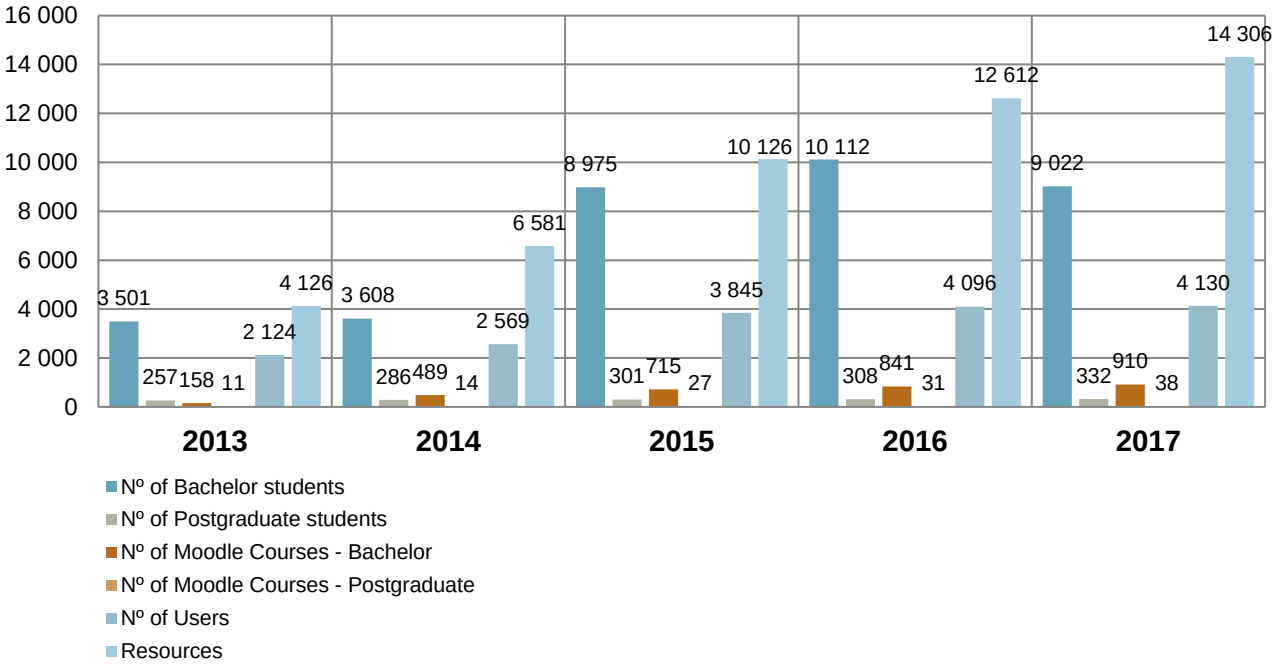
SUSTAINABILITY	
P.6.1. Academic & Institutional Sustainability Score: **Good**	- The institutional and academic sustainability of the different outputs of P3 is supported by an obvious institutional commitment which evaluators could test at ministry and institutional level. - The activities developed with local stakeholders have a clear support, which may foresee sources for sustainability in the future. - The trained staff is committed in the project activities and will continue to work in and impact the institution.
P.6.2. Financial Sustainability Score: **Low**	- The Evaluation Team is not able to confirm that the financial sustainability will be guaranteed in the future. We expect that those activities supported by MES will continue. - However, those activities aiming to capture funds from other actors (companies, municipalities, etc.) will need some structural changes, that seem to be initiated, in order to facilitate that departments and faculties may commercialise their services. - A change in culture is needed (transferred also to legislation) with regards to fundraising by Cuban Higher Education Institutions (HEIs).

Beneficiaries & stakeholders of ELINF Project – REDTIC

	LOCAL		REGIONAL / NATIONAL	
	Direct	Indirect	Direct	Indirect
INDIVIDUAL	University Management Staff (librarians, etc.) Bachelor Students MSc Students PhD Students Teaching Staff from the Network	University Community (Network universities)	University Management Staff (librarians, etc.) PhD Students Teaching Staff from outside the Network	University Community (MES universities)
ORGANIsATIONAL	Ministry of Higher Education (MES) UCLV UPR UCI UHo UC	University of Havana (UH).	Universities from the organizational structure of the MES all over the country.	Other actors from the education field in the Republic of Cuba
SOCIETAL	Community of specialist from the MES structure (those outside the REDTIC) that received training in the installation and use of the platforms for open science and education: ABCD: 88 DSPACE: 41 Moodle: 29	Communities of users of the platforms for open science and education at the MES' universities in all the provinces of the country that don't belong to REDTIC.	Institute of Scientific & Technological Documentation and Information (IDICT) of the Ministry of Science, Technology and Environment (CITMA) Universities from the organizational structure of the MES all over the country.	Users of the Telematic Network of the Ministry of Public Health (MINSAP) – INFOMED that received a benefit with the update of some of the modules of ABCD platform. UNESCO office in Havana. National Library "José Martí"

Evolution and impact of P3 with regards Moodle use by university

UCLV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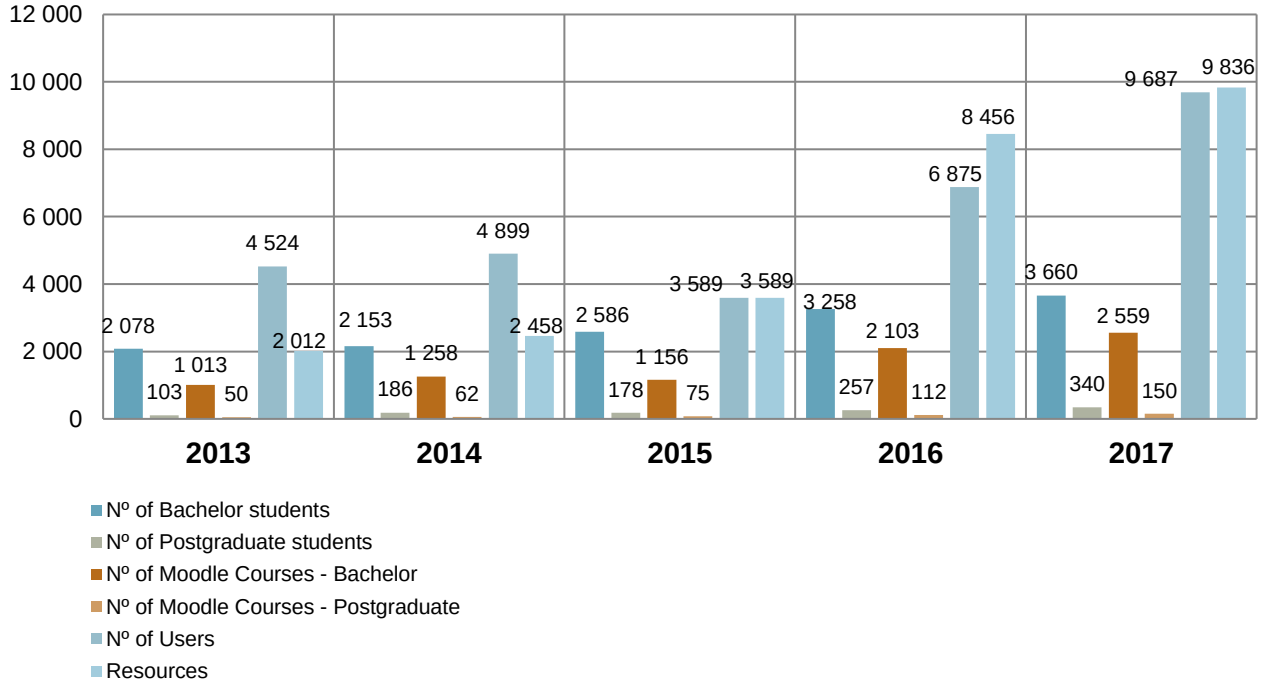
Nº of Users
Resources

UPR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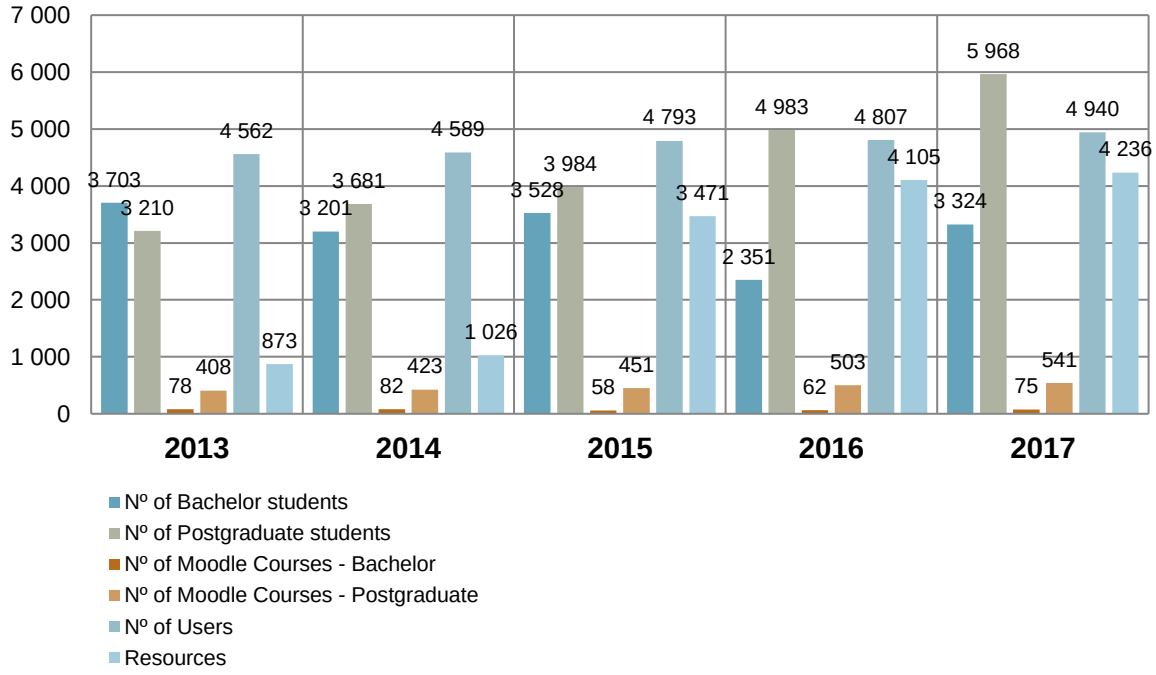
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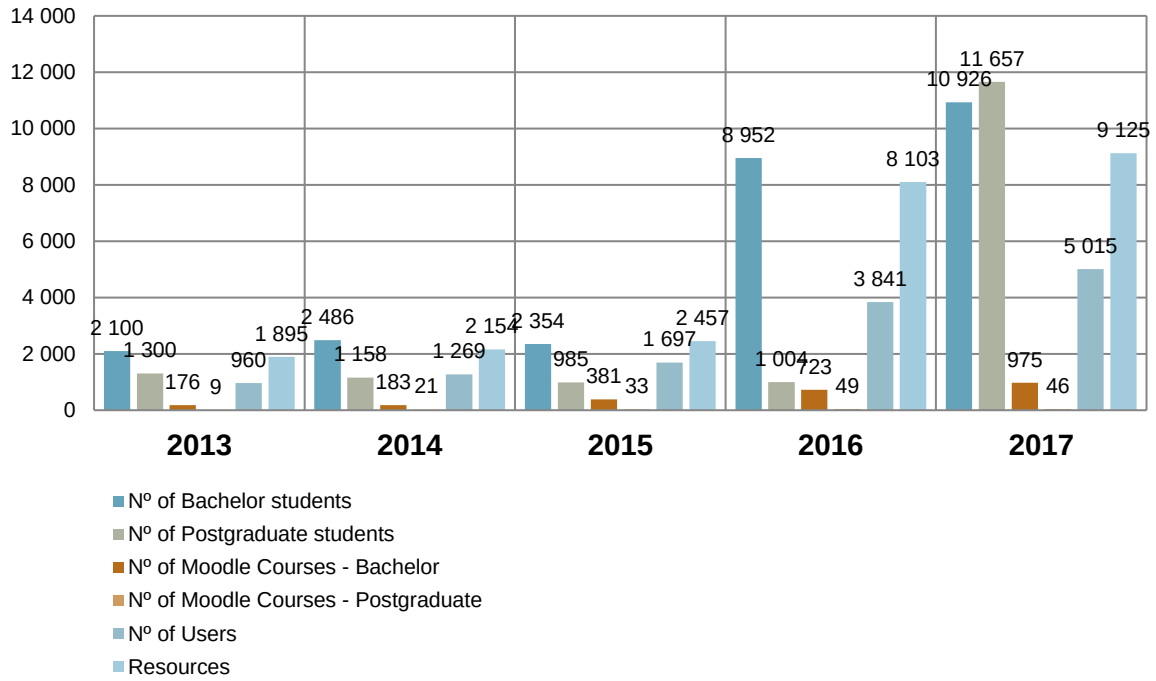
Nº of Moodle Courses - Bachelor
Nº of Moodle Courses - Postgraduate
Nº of Users
Resources

UHO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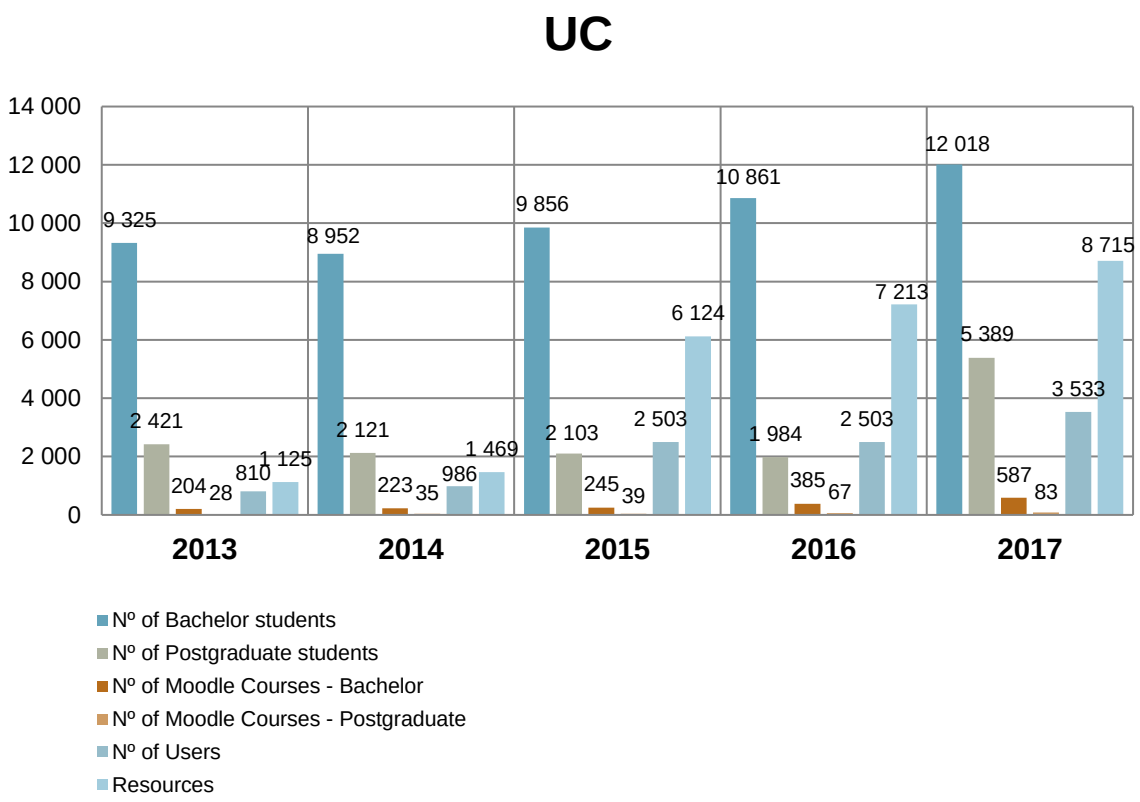
Nº of Moodle Courses - Bachelor
Nº of Moodle Courses - Postgraduate
Nº of Users
Resources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2013
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Nº of Bachelor students
Nº of Postgraduate students
Nº of Moodle Courses - Bachelor
Nº of Moodle Courses - Postgraduate
Nº of Users
Resources

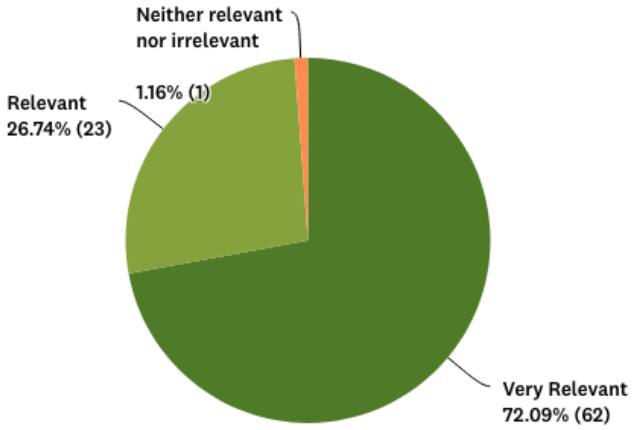
2.3 Analysis of Impact at Individual Level

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 **120** responses, around 50% of the participants.

The objective was to identify evidence with regards to 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.**

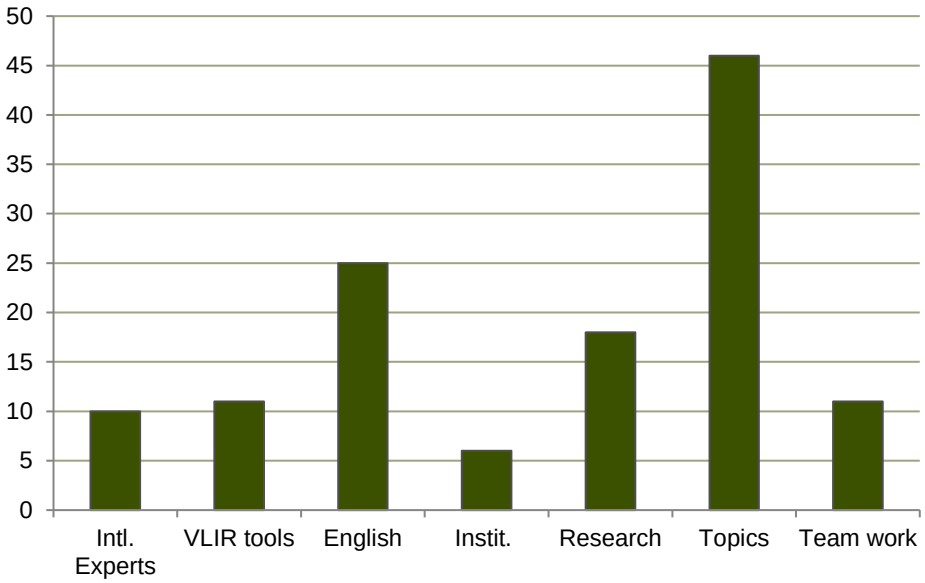
The main results of the analysis are the following.

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 98,83 % of participants. Besides this significant figure, 97,65 % of participants confirmed to have **applied the content/results of the stay/training in their training and research activities**.

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

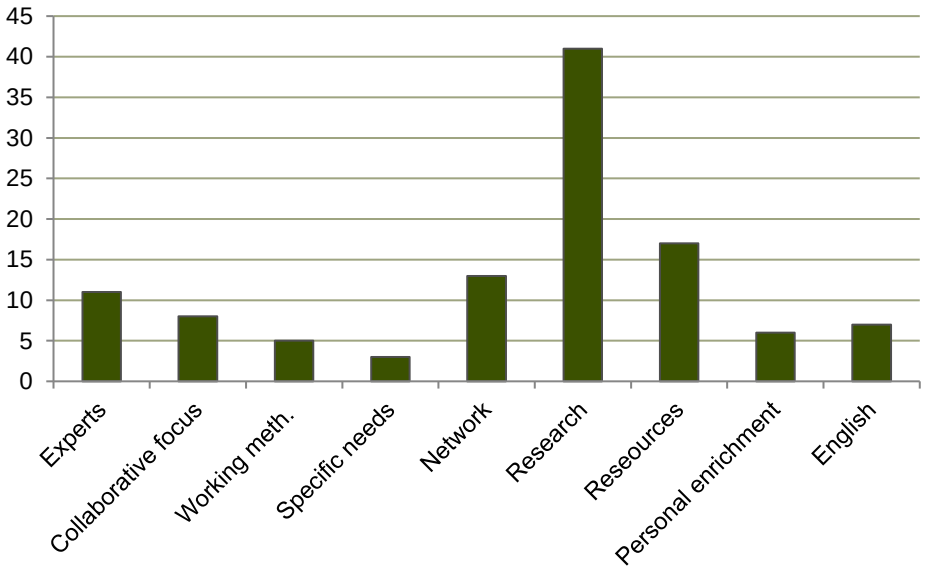


As can be seen from the above graph, the main benefits perceived from trainees are related to different areas:

- **'Research':** respondents have improved the way in which they develop their research. This includes different and key aspects of the research path: a better definition of their research topic, improvement/consolidation of their research methodology, drafting of research papers for relevant congresses and journals, an increase in their research productivity.
- **'English':** trainees feel that they've had the possibility to improve their English skills, especially in terms of communicative skills to present their research developments/findings, and experienced a real intercultural exchange at international level as well.
- '**Topics**': beneficiaries explain that, thanks to the trainings/study visits, they had the possibility to update in terms of research topics and technology (given the disciplinary orientation of the Network towards ICT). Example of topics are Big Data, Artificial Intelligence, Open Sources technologies, Ontologies, but also other systems and other Computer Science applications, Corpus Linguistics and educational platforms. They get in touch with such topics and now have a more in-depth understanding of them and exploit this for their research, but also use this for teaching purposes at institutional level.

In addition to the above-mentioned, respondents mention other aspects they have learnt. For instance, they are now more familiar with VLIR-UOS tools and with project proposal applications. They also state that they have a very positive view of the trainings, since they gave them the opportunity to develop joint collaborative work with international experts, to attend events and also to start perceiving their possible research as multidisciplinary. They appreciated working in groups and also under pressure. Finally, some of them had the opportunity to learn about key aspects in terms of design of institutional policies/processes such as the evaluation of the Cuban R&D system.

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



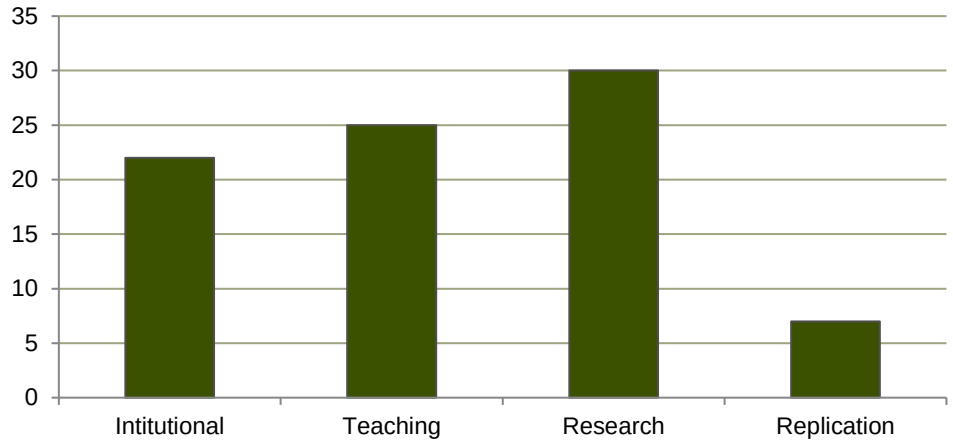
In general terms, respondents are highly satisfied with the input received from the training courses and/or study visits, that have been an important formative process. In their answers, they mentioned a wide range of benefits that made capacity building relevant both for their personal, as well as professional aspects.

As we can conclude from the graph above, the reasons why trainees consider the capacity building activities to be relevant are:

- '**Research**': courses have been a significant reinforcement of their research in terms of both initiation and implementation. They represented an occasion for update.
- '**Resources**': participants had the possibility of accessing a wide range of resources, tools and bibliographies crucial to improving their research.
- '**Network**': respondents mention that the courses have been very useful to share their research results, to cooperate with other researchers, and thus to widen their network of contacts.
- '**Experts**': the courses were relevant since participants had the chance to work with experts and to receive coaching in their research.

Other aspects mentioned are: reinforcement of their communicative skills in English, they appreciated the fact that the courses have been organised with a practical and collaborative focus and they had the opportunity to know other ways of working. Finally, they pointed out as positive the fact that the courses have been organised and focused on specific needs.

Could you please explain how you applied the knowledge acquired?



Beneficiaries explained that they applied the knowledge acquired in different ways, also depending on their profile and role within the institutions.

- 'Research': trainees point out that they applied the capacity building activities in their research. This includes improving their research methodology skills, the way in which they develop their research activities, or write research papers.
- 'Teaching': teaching has also been pointed out as one of the main acquired knowledge application areas. Respondents explain they had the possibility of applying what they had learnt for the benefit of their teaching activities, not only in terms of delivering lectures, but also for tutorship or didactic tools.
- 'Institutional': they point out that they applied the new knowledge in the improvement of different institutional processes (automation of some administrative processes), to implement IT tools (institutional databases for indicators) or in the improvement of the operation of certain units/services (Data Centres for instance).

In addition to the above-mentioned, they also pointed out that they replicated the training activities, which is indeed extremely important for the sustainability of the action.

2.4 Analysis of Impact at Society level – Case Studies

The Analysis of the Impact at Societal Level has been organised via Case Studies. A template was proposed and agreed upon 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 the Impact of the Network programme/projects at Society level to be high.**

2.4.1 Case Study 1

Case Study title	**Resources to strengthen the postgraduate education in social leaders and economic officials by the University of Camagüey**
Nature of Case Study	Contribution of Higher Education to Social Cohesion and Economic Growth
Type of Case of Study	Activity not foreseen in the project aiming to strengthen the postgraduate education in social leaders and economic officials.
Background	Project three (ELINF) started working through the courses that the provincial government develops for social leaders' formation and CEOs of public sector. The main objective is to show resources of scientific information that can be used to act with better efficiency and effectiveness.
Implementation	The implementation of the project brought: - The use of new equipment and software for participants - Access to new scientific information resources - Fruitful interdisciplinary collaboration between ICT and postgraduate government school with tangible results (showing and training postgraduate students in the use of Moodle, ABCD and institutional repositories).
Success Factors	- Successful exploitation of Capacity Building and knowledge acquired during the life of the project. - Access to new scientific information resources developed by the ELINF project. - Fruitful cooperation between the university library, information science careers, economics careers and the government.
Impact/ Results /Outcomes	The implementation of the project achieved the following benefits: - 540 (2015-2018) postgraduate students, of social and economic areas of the society, acquiring knowledge about new scientific information resources. - Some public companies and other actors have shown an interest in proving and implementing some ELINF technologies, specifically, repositories.
Conclusions	The use of ELINF resources placed at UC, not only provided knowledge to the ICT-departments and other university departments, but also promoted the co-operation to initiate new actions with different stakeholders, which, in the end has a clear impact on society.

2.4.2 Case Study 2

Case Study title	**Network Successful Cooperation between University of Camagüey and Territorial Directorate of Railways**
Nature of Case Study	Contribution of Higher Education to Social Cohesion and Economic Growth
Type of Case of Study	Application of ICT to the evaluation, maintenance and inventory of railways.
Background	The project is based on the collaboration of the Department of Civil Engineering of the UC, the Territorial Directorate of Railways in Camagüey, Faculty of Computing and Exact Sciences UC, the CEI of the UCLV and the Hasselt University. A new diffused cognitive map model is developed with a computer with Word and its application in railway studies as well as its implementation in the management system for the maintenance and repair of the railway, which consists of two fundamental stages: the inventory of via and the diagnosis and evaluation of technical status.
Implementation	The implementation of the project brought about: - new equipment and software for participants - fruitful interdisciplinary collaboration between involved departments
Success Factors	- Successful exploitation of Capacity Building and knowledge acquired during the life of the project. - New hardware and digital access - Fruitful cooperation between involved departments, working in multidisciplinary teams. - Research stays - Participation in international events
Impact/Results/outcome	The implementation of the project benefits: - Territorial direction of railways - Evaluation of the technical status of the central railway line of Camagüey and Las Tunas. - 2 Degree Thesises - 1 Doctoral Thesis - 2 Publications - 1 International event - 1 research stay at Hasselt University
Conclusions	The project not only provided knowledge to the departments, but also promoted the cooperation culture to initiate new actions with different stakeholders, which, in the end, has a clear impact on societal level in the solution of real problems.

2.4.3 Case Study 3

Case Study title	**Development of the training system to promote the information management among the universities in cooperation with the Ministry of Higher Education (MES)**
Nature of Case Study	Contribution to the training of specialists to improve the exchange of scientific information in possession by the Network member universities.
Type of Case of Study	Contribution of Higher Education as Engine of Innovation for the Higher Education sector.
Background	ELINF project have work in the development of software for the scientific information management (SIM). The Technological Reference Model created in the project, defined the SIM with two big areas: (1) the librarian management (ABCD platform), and (2) the institutional repositories management (DSPACE platform), for letting the Network member universities to socialize what they currently have.
Implementation	The Expert Committee of the ELINF project since the beginning of 2014 realized the necessity of a change in the conception of the information and data management and storage. The background was the need of Higher Education Institutions to improve the scientific production, and the use and re-use of research already developed. Taking that idea as the main objective, the software development team designed some new features for DSPACE platform, its interoperability with ABCD and MOODLE platforms, as well as a training system to prepare the libraries' specialists that have to work with it. Finally, this objective was achieved and the outcomes impacted not only the REDTIC member universities but also most of the others universities from the MES organization.
Success Factors	- Existence of the ABCD and DSPACE platforms to socialize the scientific information in the universities. - Training system in the platforms, designed for the exchange of information and ideas about the work procedures and possible outcomes. - Existence of institutional policies to regulate and legally support the exchange of scientific information among the universities.
Impact/Results/outcome	- Training in ABCD of a total of 134 information professionals from MES, from which 88 belong to universities from outside the REDTIC Network (University of Matanzas, University of Havana, University of Cienfuegos and Miner Institute of Moa, Holguín). - Registration of the development institutional repositories in the OpedDOAR and OpenROAR international platforms. - 8 thousand documents visible using the web from the dspace@uclv - Positioning of the dspace@uclv repository in the 1st position in the Web Ranking of Cuban Repositories. - More than 3 612 835 visits to the institutional repository.
Conclusions	The capacities built by the VLIR-UOS projects (ELINF and ICTSYS) in all the Network member universities, gave the possibility to: (1) developed a new repository conception to manage the information store and access, (2) designed a training for all the specialists that have to work with such a technology, (3) changed the librarians' work procedures as well as the institutional policies for the management of the scientific information. All that changes, made possible a more connected university and a new perspective for information management, access and storage in the Cuban Higher Education community.

2.4.4 Case Study 4

Case Study title	**Centre of Academic Competitive Intelligence (INCOMAC): intensive knowledge organisation for the development of the university procedures as well as the enterprises of Holguín.**
Nature of Case Study	Contribution to the role of HE as an engine of innovation
Type of Case of Study	Creation of a library service that later on became a university centre that has made changes in the work methods of the information professionals of the UHo in general, and of the libraries in particular. This service centre now offers a highly-demanded and specialised service of information literacy, management, as well as scientific and technical surveillance to improve the university procedures and those from territorial and national enterprises.
Background	With the technology and the knowledge given by ELINF project, mainly as a result of the actions in Cuba and Belgium, the Department of Scientific and Technical Information of the UHo moved from a classic model for information management to a new and dynamic paradigm, crucial for the decision-making process. As an annex work line of ELINF project at UHo, INCOMAC was created with multidisciplinary staff accompanied by collaborators from the libraries network at the university, and also at the Holguin territory. Working with that enormous and distributed staff, INCOMAC procedures analysed the environment in correspondence with the university's strategic projection to support the competitiveness of the university procedures, as well as to extend its services to the institutions and enterprises of the territory and the nation.
Implementation	The team of the ELINF project at UHo made INCOMAC possible via: (1) a study of feasibility and needs of the researchers and staff from the University of Holguín (UHo) and the Ministry of Higher Education (MES), (2) researches about intelligence studies with outcomes in undergraduate term papers, as well as specialties and doctorates term papers, (3) the technologies given by projects ELINF and ICTSYS at the university (5 computers, a datacentre and the connectivity); and also (4) the training and recruitment of specialised professionals in the field of enterprise intelligence in general and competitive intelligence in particular.
Success Factors	- Conversion of the classical services of the libraries network into informational products with an aggregate high value. - Unique group of its kind in the MES-organisation as a competitive intelligence system. - Increment of the INCOMAC-services demand since the quality of the offers. - Extension of the Commerce Chamber of the Cuban Republics services to promote the direct foreign inversion, as well as the nickel industry pole.
Impact/Results	- Positive conversion of the services' value of the libraries network from the UHo. - Satisfaction of the services' users: 563 researches, three institutional projects, Vice-rectory of research, enterprises from the nickel industry pole in Moa, Holguín and the offices of the Commerce Chamber of the Cuban Republic in Holguín and Las Tunas. - Execution of joint researches with the Universidad Católica del Norte de Chile in Chile, where four lectures were given and a PhD stay is going to take place with the work done in INCOMAC. - Direct impact in the execution of a PhD research about competitive intelligence, the support to fifteen ongoing PhD researches and a postgraduate course term paper with application to GEOCUBA (enterprise in the territory).
Conclusions	INCOMAC has been developed from the technological advantages given by the VLIR-UOS Network to the university. The competitive intelligence service has demonstrated to be a high-value and demanded element for the university processes, as well as for the territorial and national enterprises. Technologies are crucial for its sustainability as well as the access to first-level databases. The services provided by INCOMAC can be commercialised to have direct incomes for the university and to stimulate professionals.

2.4.5 Case Study 5

Case Study title	**Impact of the university student brigade 'Leonela Relys' in the educational sector in the city of Camagüey**
Nature of Case Study	Contribution of the university to solve the shortage of teachers at schools of the city of Camagüey.
Type of Case of Study	Contribution to the role of HE as an engine of Social Cohesion
Background	The university pays close attention to social needs that define its functions. The university faces the demand of the Ministry of Education at the city of Camagüey so that it contributes to solving the problem resulting from the teacher's shortage at all levels of education. The solution leads to the creation of a university students' brigade named after Leonela Relys, a Cuban teacher involved in a literacy programme in developing countries. The brigade groups not only teachers' trainees but also engineering and social sciences' students to teach subjects related to their corresponding major at city primary and high schools. The pedagogical, didactic and methodological preparation of the students has been favoured by the equipment supplied by VLIR-UOS to the television studio and the REDUC network. The training system for students of the Leonela Relys brigade is carried out by means of a webpage through which they have access to videoconferences and other educational resources in digital format, fostering their improvement as teachers. The brigade is made up of 245 students from the ten faculties of the university.
Implementation	The members of the brigade are teaching at 25 senior high schools, four junior high schools and four technical schools of the city of Camagüey. The improvement programme to be developed was conceived taking into account students' weaknesses on pedagogical issues. The website created is the main interactive means used to provide such didactic guidance.
Success Factors	The existence and disposition of the human capital necessary to undertake the task, as well as the existence of the educational television studio of the university that had been equipped with film cameras and video editing equipment favours the video conference production process. The server enlarged capacity resulting from VLIR-UOS donations is also a key factor for success.
Impact/Results/Outcome	The work deployed by the brigade enabled the attention of (3870) students of (129) teaching groups, distributed by education as follows: Senior high School (2190), junior School (540) and Technical schools (1140). The members of the brigade expressed high levels of satisfaction with the quality of the preparation system supported by the intranet system. The Ministry of Education in the territory of Camagüey and school staff that benefit from the brigade have a high level of satisfaction with the quality of the work deployed by them.
Conclusions	The improvement system projected for the members of the Leonela Relys brigade and based on the intensive use of information and communication technologies allowed to guarantee the effectiveness and quality of the brigade preparation to face the teaching at the aforementioned educative levels.

2.4.6 Case Study 6

Case Study title	**The Birth of HPC Cuba. How supercomputing is being made available to all Cuban researchers using FOSS**
Nature of Case Study	Contribution to the role of HE as an engine of Research
Type of Case of Study	Activity not foreseen in the project, which created synergies between VLIR-UOS Programmes, the industry and the international community regarding scientific computation (HPC/Big Data) with tangible impact on the Cuban scientific community.
Background	Scientific Computing (High Performance Computing and Big Data) has rapidly become an important tool for researchers. Thanks to big donations from Ghent University, various centralised supercomputers are already providing Scientific Computing services to Researchers in Cuba. UCLV HPC cluster provides ubiquitous and easy access to these supercomputers and researchers can make effective use of this capacity. It has been foreseen the integration of UO and UCI clusters. Technological and knowledge transfer is attracting the industry sector for joining their clusters to the project idea (e.g. Biocubafarma). Cuban scientists have now access to the national scientific supercomputing clusters.
Implementation	The HPC Cuba has a geographic distribution of HPC-infrastructure at three points, the strongest Cuban universities regarding ICT-infrastructure: UCI in Havana (> West), UCLV in Santa Clara (Central) and UO in Santiago de Cuba (East). Two IBM-clusters were installed in Havana and Santa Clara (https://www.uclv.hpc.cu/ https://wiki.uclv.hpc.cu/doku.php), with about 600 cores and one TB of RAM, also a Big Data cluster in Santa Clara, with twenty servers and two GPU nvidia cards. A DELL cluster was installed in Oriente with similar capacities and using infiniband technology for interconnection.
Success Factors	- The infrastructure donated by Ghent University; - The usage of FOSS and the capacity generated by the HPC international community. - The training stays at the Flanders Supercomputer Center at UGent and the visits to Cuba of HPC international experts from Belgian and German supercomputer centres. - The participation of Cuban staff in international WS (FOSDEM and Configuration Camp.).
Impact/Results	- 40 new research labs are making use of the new HPC/Big Data facilities. - Fourteen Cuban institutions are using HPC-facilities in the new conception HPC-Cuba (UNICA, BIOCUBAFARMA, CUJAE, INSMM, INRH, SLD, TRANSNET, CEAC, UNISS, ICIMAF, DATYS, CENATAV, INSNET, UH, UCLV). - One national industry, ETI-Biocubafarma, has become a partner to join its HPC-cluster to the project, and a second one has shown interest (CUPET). - In the last four months 16,229 hours of scientific calculation has been reported in the new HPC-Cuba cluster. - A complete module-package for the automatic installation of the Yade application has been contributed to the international HPC-Easybuid community.
Conclusions	This project initiative enables, supports, guides and trains researchers to maximise their scientific output with the use of Scientific Computing services. This way, we are greatly influencing the quality and quantity of research conducted at various non-partner universities and institutions on a regional and national level, thus contributing to the general sphere of interest where science aims to contribute to national development. (https://archive.fosdem.org/2017/schedule/event/hpc_cuba/) (http://www.cubadebate.cu/especiales/2018/01/23/supercomputadoras-en-cuba/#.WmdiXkvav1w)

2.4.7 Case Study 7

Case Study title	**NETWORK Successful Cooperation with Pedagogical Schools, MINED and Handicap International.**
Nature of Case Study	Contribution of Higher Education as an engine of Social Cohesion
Type of Case of Study	Activity not foreseen in the project which created synergies with other Belgian development actors (Handicap International) and tangible impact on society.
Background	Project 2 (Open ICT Systems and Management) started working with the pedagogical departments at three universities of the network (UCLV, UPR and UHO). Departments were requesting support in hardware and software in order to support the special education discipline. The cooperation improved substantially with new funding coming from a 'Close the Gap'-call (VLIR-UOS). In the new initiative were involved, together with the universities (pedagogical departments), the Belgian NGO Handicap International and the National direction of special education in the Ministry of Education (MINED).

Implementation	The implementation of the project brought about:
	- new equipment and software for participants;
	- a frFruitful interdisciplinary collaboration between ICT and pedagogical departments with tangible results.
	- Contribution to the learning process and computational skills of children with disabilities by the introduction of specific software application such as:
	  - 'Jaws' software for blind students.
	  - The installation and use of the course package 'Multi-saber collection' with nineteen learning products for primary education, 'Navigator collection' with eighteen learning products for secondary education, 'A jugar collection' and the software 'Jugando'.
	  - The audiobooks software ('Audiolibros y Periolibros') for language development for children diagnosed with mental retardation, hearing loss, blindness and bad vision.

Success Factors	- Successful exploitation of capacity building and knowledge acquired during the life of the project. - New hardware and digital access. - Fruitful cooperation between ICT-departments, pedagogical departments, MINED and HI.
Impact/Results/outcome	The implementation of the project benefits: - pedagogical departments from the three universities, with new equipment (computer labs) and closer links to their IT-departments. - 379 university students and 77 teachers of the Special Education career in UHO, UPR and UCLV. - 1289 students and 435 teachers from twelve Special Education Schools belonging to MINED (see annexes a, b and c), with new ICT-equipment and software. - About 50 children, who live in the Home of Children without Family Support. The project also expects to change methodologies and policies for Special Education at national level, via the active implication of MES and MINED in the activities. The contribution to the curricular strategy of environmental education has been consolidated with the collection of brochures from the national aquarium using animals with language to help mentally retarded and blind schoolchildren with computer programmes for blind people. A special educational study programme at pedagogical schools was able to actualise the curricula for teachers devoted to teach children with special needs. Until then, the career did not have professional software that would allow the theory and practice link depending on the corrective and/or compensatory work in the various specialties of the Special Education career. All these results contributed significantly to the accreditation by the National Accreditation Board of the Special Education and logopedics study programmes.
Conclusions	The project not only provided knowledge to the ICT-departments but also promoted the cooperation culture to initiate new actions with different stakeholders, which, in the end, has a clear impact on societal level (see video https://youtu.be/ZvKpvveR4Kw and pictures in annexes).

4 Annexes

4.1. 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 Program/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, methodologies, partnerships and implementation modalities relevant? • Is the programme responsive to changes in the local priorities and development context?
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 potential major effects on the relevance of the Program. See recommendation No`s:	
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 program (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 organizational 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 awareness, knowledge, skills at institutional level in order to create changes in society? • Are there changes in organizational capacity (skills, structures, resources) in order to serve society.
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**
		• 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 formalization 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 Program. 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 program (and between the different projects)? • Have possibilities for synergy explored within programme?
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:	

Sub-criterion P. 2.2. Synergy and Complementary		
Scores	**Definition Scores**	**Topic and item lists**
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:	• Have activities been organized together with other projects?

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:	

Sub-criterion P.2.4. Ownership		
Scores	**Definition Scores**	**Topic and item lists**
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 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?
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:	
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.	

Sub-criterion P.3.2. Relationship between Objectives, results and means.		
Scores	**Definition Scores**	**Topic and item lists**
	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?
3-Good	The specific objectives (and outputs) will be achieved in case of successful implementation during the second phase. The project is on track	

Sub-criterion P.4.1. Specific Academic Objectives		
Scores	**Definition Scores**	**Topic and item lists**
	in order to achieve the specific objectives. Minor room for improvement exists. See recommendations No`s:	• 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 organizational capacity (skills, structures, resources). • The indicators for the specific academic objective have been achieved.
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 organizational 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.
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:	

Sub-criterion P.6.1. Academic & Institutional Sustainability		
Scores	**Definition Scores**	**Topic and item lists**
1-Poor	Academic sustainability will not be guaranteed in the second phase. Extra necessary measures are urgently needed. See recommendation No`s:	• 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 formalization of interuniversity consultations (North-South and South-South). • Measures are taking for staff retention of trained staff.

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:	

4.2. Mission Programme

17/01/2018
MES

Hora	Actividades	Participan
10.30 am	Entrevista con el director de informatización del MES. P3 ELINF y P2 RESICT	Dr. Walter Baluja
11:30 am	Entrevista con la directora de formación del MES y el metodólogo para la enseñanza del inglés. P3 ELINF	Dra. - Directora de formación Santiago – Metodólogo de idioma inglés.
Tarde	Entrevista con el Ministro de Educación Superior y Vice-Ministros, Directora General	Ministro, VMP, DRI, Coordinadores Proyectos VLIR IUC-UO, Red Nacional

18/01/2018
UPR

Hora	Actividad	Participan
7.00 am		
9.30 am	Recibimiento y merienda	Rector, Barrera, Vento, Maidelyn, Maricela.
10:00 am	Presentación general de los resultados del proyecto en la UPR por parte del Rector.	Equipo de desarrollo de ABCD, DSPACE y Moodle, Centro de Idiomas y Dirección de informatización,
11:00 am	Visita al nuevo local del nodo.	Equipo DI.
11:30 am	• Exposición por un miembro del proyecto 3 de los resultados en ABCD, DSPACE y Archivo Oscuro en la UPR (15 minutos). • Exposición por un miembro del proyecto 3 de las aplicaciones asociadas a la gestión de la información científico-técnica que se han desarrollado en la universidad (proGINTEC) con el apoyo del proyecto VLIR (15 minutos).	CRAI
12.30 m		
1:30 pm	**Visita al Centro de Idiomas:** • Exposición por un miembro del proyecto de todo el desarrollo de MOODLE en la UPR (15 minutos). • Presentación del marco de trabajo en entrenamiento en idiomas apoyado por el VLIR (tanto metodológica como técnicamente) (15 minutos).	Equipo de desarrollo de MOODLE. Equipo del Centro de idiomas.

Hora	Actividad	Participan
2:30 pm	**Presentación del proyecto 2:** • Recorrido por espacios creados a partir del proyecto VLIR en el edificio docente. • Intercambio con estudiantes y profesores que trabajan en el desarrollo de aplicaciones para la gestión pública.	Roberto Barrera, Ramon Jaime, Vento, Serrano, equipo de la DI.
3:45 pm	Encuentro con coordinación del proyecto para la educación especial.	Coordinador del proyecto y directivos de la FEI, metodólogo MINED.
4:30 pm	Conclusiones de la visita	Rector, Barrera, Vento, Maidelyn, Maricela.

19/01/2018
UCI

Hora	Actividades	Observaciones
9:00-9:15 am	Recibimiento y breve explicación sobre la UCI.	Rectora y/o vicerrectores designados, Decano Fac. 2 y Director CIGED, representante, focal points y jefes de equipos de desarrollo.
9:15-9:30 am	Presentación sobre el trabajo desarrollado por la UCI en el programa.	Rectora y/o vicerrectores designados, Decano Fac. 2 y Director CIGED, representante, focal points y jefes de equipos de desarrollo.
9:30 am	Coffee break	
9:45-10:00 am	Visita al Centro Nacional de Educación a Distancia (CENED).	Representante y focal points
10:15-11:45 am	Intercambio con evaluadores	Vicerrectores designados, Decano Fac. 2 y Director CIGED, representante, focal points, jefes de equipos de desarrollo y beneficiarios principales.
12:00-13:15 m	Almuerzo ofrecido por la UCI	Visitantes y anfitriones UCI
13:30 pm	Visita al Centro de desarrollo de software CIGED.	Representante y focal points
13:45 pm	Visita al Nodo Central	Representante y focal points, Director de GT, Omar Pimentel.
14:00 pm	Visita al HPC	Representante y focal points
14:30 pm	Visita al Centro de Idiomas (Docente 4).	Representante y focal points
15:00 pm	Intercambio de conclusiones de la visita.	Vicerrectores designados, Decano Fac. 2, representante, focal points.

20/01/2018
National stakeholders

Hora	Actividades	Participan
9:00 am	Encuentro con metodólogo nacional de educación especial en el Ministerio de Educación y representante de ONG Handicap Internacional. P2 ICTSYS	- Lic. Osmel – Metodólogo nacional Edu. Especial MINED. - Laura – Representante ONG Handicap Internacional. - Miembros del P2 ICTSYS
10:00 am	Encuentro con Especialista principal del Instituto Nacional de Recursos Hidráulicos. P2 ICTSYS	- Ing. Elio Oscar Pacheco Rivero – Especialista principal del grupo de gestión estratégica y metodología de la Información. - Miembros del P2 ICTSYS
11:00 am	Encuentro con autoridades de Lacetel y el Ministerio de las comunicaciones. P1 RESICT	- Ing. Blas Enrique Rodríguez Díaz - Director de Desarrollo Tecnológico e Inversiones del MICOM. - M. Sc. Enrique Santana Pérez, I. E. - Especialista Superior y Secretario de la Comisión Técnica de la Televisión Digital Terrestre de Cuba. - Especialistas de LACETEL - Miembros del proyecto 1 RESICT
12:00 m	Encuentro con especialistas de la ETI-Biocubafarma. P2 ICTSYS	- Ing. Karel Asael Barberena – Especialista principal de infocomunicaciones y Experto principal en HPC. - Daniel – Especialista de Infocomunic.
1:30 pm		
14:00 pm	Visita al HPC	Representante y focal points,

29/01/2018
UC

Hora	Actividades	Participan
8.30 am	Recibimiento Institucional UC – Rector y Consejo de Dirección / 8.30 am / Salón del Rectorado.	Rector, Consejo Dirección, Representante de la Red UC y Focal Point (FP) UC.
9:30 am	Presentación del Proyecto 1	Todos los Miembros del Proyecto
10:00 am	Entrevista con FP Proyecto 1	Yaile Caballero Mota
10:30 am	Entrevistas con beneficiarios directos	Entrevista a profesores y estudiantes de Doctorado
11:30 am	Presentación del Proyecto 3	Todos los Miembros del Proyecto
12:00 m	Entrevista con FP Proyecto 3	María de los Ángeles Legañoa Ferrá
12:30 m	Visita al laboratorio VLIR Sede “José Martí”.	Miembros de Proyectos 1 y 3

Hora	Actividades	Participan
1:00 pm		
2:00 pm	Presentación del Proyecto P2	Todos los miembros del Proyecto P2
2:30 pm	Entrevista con miembros del Proyecto P2.	Miembros del Proyecto P2
3:00 pm	Recorrido por NODO y Laboratorios de la Facultad de CA.	Julio Madera Quintana Amilcar Arenal Cruz
4:00 pm		

30/01/2018
UHO

Hora	Actividades	Participan
10.30 am	Recibimiento Institucional UHO – Rector y miembros del Consejo de Dirección.	Rector, Consejo Dirección
10:50 am	Refrigerio	Delegación de evaluación
11:15 am	Entrevistas con Directivos	Director de Relaciones Internacionales, Decano de la Facultad de Informática-Matemática y Vicerrector de investigaciones y posgrado.
12:15 m	Visita al laboratorio de audiovisuales y sala de navegación e intercambio con miembros del P3 en el área de tecnología educativa (Moodle).	Miembros del P3 en el área de tecnología educativa.
1:00 pm	Intercambio con Profesores de la facultad de informática-matemática que han cursado las escuelas doctorales y visita al laboratorio de doctorado.	Miembros de Proyectos 1
1:30 pm	Visita al centro de datos e intercambio con miembros del P2.	Miembros del Proyecto P2
2:15 pm	Visita a la biblioteca Benito Juárez e intercambio con los miembros del P3 en el área de gestión de la información (ABCD y DSPACE).	Miembros del Proyecto P3 en el área de gestión de la información.
3:00 pm	Encuentro con beneficiarios indirectos	Investigadores del Centro de Estudios de CAD-CAM e Investigadores del Grupo de Procesamiento de Datos Biomédicos y el Centro de Ataxia (del Ministerio de Salud Pública).
3:45 pm	Encuentro con beneficiarios indirectos asociados al Proyecto CTG.	Profesores del Departamento de Educación Especial de la UHO, Directivos de la Dirección Municipal de Educación que atienden la Educación Especial y Directivos y profesores de escuela especial del municipio de Holguín.
4:30 pm	Traslado al hotel	
7:30 pm	Cena de Despedida	

31/01/2018 – 01/02/2018
UCLV

Hora	Actividades	Participan
2.00 pm	Arribo a la UCLV. Almuerzo	Delegación de Evaluación y comité de bienvenida.
3:30 pm	Recibimiento Institucional y presentación de la UCLV.	Rector, Vicerrectores de Investigación y Posgrado e Informatización, Decanos de las facultades MFC y FIE, J' departamento Proyectos y Directiva del proyecto.
4:15 pm	Presentación del Departamento de Proyectos y Eventos de la UCLV e introducción al programa de RED del VLIR en Cuba.	Miembros del departamento de proyectos y eventos, especialista de colaboración de la DIC y Directiva del Proyecto.
8:30 pm	Presentación de los principales resultados del proyecto 2 en la Red UCLV, estrategia de desarrollo en el área de informatización.	Miembros de Proyectos 2

9:00 am	Visita al centro de datos e intercambio con miembros del P2.	Miembros del Proyecto P2
10:00 am	Traslado al CDICT	
10:15 am	Visita al CDICT e intercambio con los miembros del P3 en las áreas de gestión de la información (ABCD, DSPACE, DarkArchive, VIVO) y tecnología educativa (Moodle).	Miembros del Proyecto P3
11:15 am	Coffee break	
11:50 am	Presentación del CII y el programa de formación doctoral y el desarrollo de investigaciones conjuntas con otras universidades del proyecto.	Miembros del P1
12:20 m	Intercambio con diferentes Grupos de investigación en TIC (Telecomunicaciones, Automática, Procesamiento de señales e imágenes).	Miembros del P1
1:20 pm	Intercambio con Estudiantes, profesores y especialistas.	Miembros del Proyecto
2:20 pm	Conclusiones del Recorrido realizado al programa de RED.	Rector, Vicerrectores de Investigación y Posgrado e Informatización, Decanos de las facultades MFC y FIE, J' departamento Proyectos y Directiva del proyecto.
3:00 pm	Traslado a la ciudad y Comida de despedida	

4.3. 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 PINAR DEL RÍO (UPR)

Name	Position	Project
Yorki Mayor Hernández	Rector	
Maricela González Pérez	Vicerector of R&D	Project 4 PSUP
Mario Luis Gómez Ibizate	Vicerector	
Roberto Barrera Jiménez	Dean	Project 1, 4 RESICT-PSUP
Alberto Serrano Gómez	Director	Project 2 ICTSYS
José R. Vento Álvarez	Project 2 Leader	Project 2 ICTSYS
Maria del C. Martínez	Library Director	Project 3 ELINF
Maidelyn Díaz Pérez	Project Leader	Project 3 ELINF
Tamara Gutierrez Baffill	Language Center Dir.	Project 3 ELINF
Ramon A. Jaime Infante	Director	Project 1 RESICT
Yandilier Rojas Lorenzo	Member	Project 2 ICTSYS
Arian Trujillo Glez	Member	Project 2 ICTSYS
Sergio L. Barrios Blanco	Member	Project 3 ELINF
Osmara Valdés Santos	Member	Project 3 ELINF
Erdin Espinosa Glez	Member	Project 3 ELINF
Rafael Martínez Estevez	Member	Project 3 ELINF
Reynaldo J. Rdguez Font	Member	Project 3 ELINF
Ariosky Areces González	Member	Project 1 RESICT
Diego M. Ferreiro García	Member	Project 3 ELINF
Mabel Rdguez Poo	Member	Project 3 ELINF
Yarlenis Pacheco Suárez	Member	Project 1 RESICT
Darielys Hernández Mitjans	Member	Project 1 RESICT
Randy Aguiar Guerra	Member	Project 1 RESICT
Roberto Valdes Díaz	Student	Project 1 RESICT
Daniel Valdes García	Student	Project 1 RESICT

Name	Position	Project
Alejandro Pelaez Batista	Student	Project 1 RESICT
Juan Pablo Ferro	Student	Project 1 RESICT
Roylan Rojas Carmona	Student	Project 1 RESICT
Raicel Miguel Fonticiella	Student	Project 1 RESICT
Carlos César Torres Paez	Dtor GEDELTUR	Project 1 RESICT
Roberto Lopez Pérez	Student	Project 1 RESICT
Olivia Garcia Reyes	Director	Special Schools
Sayuri González Reyes	Department	Special Schools
Giserbis Aguiar Aguiar	Department	Special Schools
Yamira Mirabal González	Member	Project 3 ELINF
Iriadna Marín de León	Member	Project 3 ELINF
Hendy M. Peréz Barrera	Member	Project 3 ELINF
Amanda Alvarez Camero	Member	Project 3 ELINF
Guillermo J. Cejas López	Member	Project 3 ELINF
Lazaro Echande Padrón	Member	Project 3 ELINF
Yosbel Ganga Alonso	Member	Project 3 ELINF
Tania Yaquelin Cala Pequero	Member	Project 3 ELINF
Dianelys Martinez Rodriguez	Member	Project 3 ELINF
Jorge Alberto Lozano Maqueira	Member	Project 3 ELINF
Yusy Vazquez Váldez	Member	Project 3 ELINF
Mario Luis Gomez Ramirez	Member	Project 3 ELINF
Massiel Miranda Morales	Member	Project 3 ELINF
Amelia M. Labrador Vento	Member	Project 3 ELINF
Sonia Montane Caballero	Member	Project 3 ELINF
Ranses Ramos Miranda	Member	Project 3 ELINF
Taymi Breijo Urroz	Member	Project 3 ELINF
Julita Morales Arencibia	Member	Project 3 ELINF
Noexey Palacio Frontolea	Member	Project 3 ELINF
Yandy J. Muñoz Labrador	Member	Project 3 ELINF
Maidelyn Díaz Pérez	Member	Project 3 ELINF
Joovarun Blanco Borrego	Member	Project 3 ELINF
Nivia E. Alvárez Dópico	Member	Project 3 ELINF
Belkis Rojas Hernández	Member	Project 3 ELINF
Anamaris Rojas Murillo	Member	Project 3 ELINF
Daniel E. Negrin Reyes	Member	Project 3 ELINF

UNIVERSIDAD DE LAS CIENCIAS INFORMATICAS (UCI)

Name	Position	Project
Raydel Montesino Perurena	First vice-rector and member Project 2	Project 2, 4 ICTSYS-PSUP
Ivonne de la Caridad Collada Peña	Representative UCI and PETICT coordinator. Director Language Center	Project 3, 4 ELINF-PSUP
Febe Ángel Ciudad	South Project Leader	Project 3 ELINF
Lidia Ruiz Ortiz	Director CENED and focal point Project 3	Project 3 ELINF
Iván Pérez Mallea	Deputy-director CENED	Project 3 ELINF
Osmar Núñez Rodríguez	CENED	Project 3 ELINF
Lisy Maday López Lugo	Expert CENED	Project 3 ELINF
Dalia Monteagudo Campos	Expert CENED	Project 3 ELINF
Dunia María Colomé Cedeño	Decana Facultad 4	Project 3 ELINF
Alberto Alejandro Arias Benítez	Developer ABCD 3.0	Project 3 ELINF
Basilio Puentes Rodríguez	Developer ABCD 3.0	Project 3 ELINF
Leandro Tabares Martín	Coordinator development ABCD	Project 3 ELINF
Marisol Patterson Peña	Expert undergraduate education, member PETICT	Project 3 ELINF
Grethel Castillo Reyes	Joint PhD	Project 1 RESICT
Héctor Raúl González Diez	Expert ABCD	Project 3 ELINF
Ruber Hernández García	Researcher	Project 1 RESICT
Luis Carlos Álvarez Fernández	Coordinator development DSpace	Project 3 ELINF
Gleidis Rosabal Espinosa	Developer ABCD 3.0	Project 3 ELINF
José Javier Hernández Benítez	Developer ABCD 3.0	Project 3 ELINF
Dayana Caridad Tejera Hernández	Joint PhD	Project 3 ELINF
Yerandy Manso Guerra	Resarcher and Moodle expert	Project 1, 3 RESICT-ELINF
Joelsy Porvén Rubier	Expert network administration	Project 2 ICTSYS

UNIVERSIDAD DE CAMAGÜEY (UC)

Name	Position	Project
Julio Cesar Madera	Vicerector y FP Project 2	P2 ICTSYS
Maykel Iamarales	Expert	P2 ICTSYS
Elieser Estrada	Expert	P2 ICTSYS
Reynelbis Larquin	Teaching Staff	P2 ICTSYS
Yanaima Jauriga	Teaching Staff	P2 ICTSYS

Name	Position	Project
Ernesto Alejandro Porro	Teaching Staff	P2 ICTSYS
Marays Gonzalez	Expert	P2 ICTSYS
Marcos A. Fuentes	Teaching Staff	P2 ICTSYS
Darvin Rivera	Teaching Staff	P2 ICTSYS
Jorge Eugenio Pacheco	Teaching Staff	P3 ELINF
Reinaldo Alonso	Presidente UIC	P2 ICTSYS
Yaima Filiberto	Decana y Representante RED UC	P1 RESICT
Ognara Garcia	Vicedeean	P3 ELINF
Frank Balmaseda	Teaching Staff	P1 RESICT
Yoan Martinez	Teaching Staff	P1 RESICT
Jose Carlos Hernandez	Teaching Staff	P1 RESICT
Marcos Leiva	Teaching Staff	P1 RESICT
Anisley Cano	Metodólogo	P3 ELINF
Orosmán Estévez	Moodle Team Member	P3 ELINF
Floriselda Cuesta	Directora GIC	P3 ELINF
Dianelis Olivera	Teaching Staff	P3 ELINF
Maria E. Rivera	Teaching Staff	P3 ELINF
Adrian Eduardo Cancino	Teaching Staff	P3 ELINF
Barbara Maria Carvajal	Metodólogo	P3 ELINF
Manuel Narciso Montejo	Teaching Staff	P3 ELINF
Mabel Frias	Teaching Staff	P1 RESICT
Yaile Caballero	Directora RI y FP Proy 1	P1 RESICT
Yanela Rodriguez	Teaching Staff	P1 RESICT
Dianne Arias	Teaching Staff	P1 RESICT
Sayly Ojeda	Teaching Staff	P1 RESICT
Enrique Molina	Teaching Staff	P1 RESICT
Rafael Larrua	Teaching Staff	P1 RESICT
Wilfredo Martínez	Teaching Staff	P1 RESICT
Mairelis Ramírez	ETECSA	P1 RESICT
Alberto Granela	Dir. Terr. Ferrocariles	P1 RESICT
Pedro Ramírez	PESCACAM	P3 ELINF
Eduardo Sierra	J. Dpto Proyecto	
Pablo Galindo	Vicerrector	P4 PSUP
Gerson Herrera	Director CyT	
Amikar Arenal	Decano	P2 ICTSYS

UNIVERSIDAD DE HOLGUIN (UHO)

Name	Position	Project
MSc.Arquímedes René Leyva Téllez	Previous Representative	Project 1-2-4 RESICT-ICTSYS-PSUP
DrC. Antonio A. Maldonado Maldonado	Focal point	Project 1 RESICT
DrC. Rosa Isabel Urquiza Salgado	Member	Project 1 RESICT
MSc. Humberto Rodríguez Ávila	Joint PhD	Project 1 RESICT
MSc. María I. Castellanos Domínguez	ICT PhD School	Project 1 RESICT
MSc. David Leyva Leyva	ICT PhD School	Project 1 RESICT
MSc. Leydis Lamoth Borrero	ICT PhD School	Project 1 RESICT
MSc. Ariam Rivas Méndez	ICT PhD School	Project 1 RESICT
MSc. Ernesto Parra Inza	ICT PhD School	Project 1 RESICT
MSc. Yisel Clavel Quintero	ICT PhD School	Project 1 RESICT
MSc. Camilo Velázquez Rodríguez	ICT PhD School	Project 1 RESICT
MSc. Andres Henriquez Pérez	ICT PhD School	Project 1 RESICT
MSc. Roberto Estrada Leyva	ICT PhD School	Project 1 RESICT
MSc. Dagnier Curra Soza	ICT PhD School	Project 1 RESICT
Raúl José Expósito García	ICT PhD School	Project 1 RESICT
MSc. Ma. del Carmen Rodríguez Hernández	ICT PhD School	Project 1 RESICT
MSc. Roberto A. Becerra García	ICT PhD School	Project 1 RESICT
Yanier Sánchez Ávila	Focal Point	Project 2 ICTSYS
Vladimir Reyes La´O	Staff Member	Project 2 ICTSYS
Héctor Luis Lorenzo Zaldívar	Staff Member	Project 2 ICTSYS
Eduardo Fernández Aguilar	Staff Member	Project 2 ICTSYS
Guillermo Agustín Cabrera Sablón	Staff Member	Project 2 ICTSYS
Edgar Javier Peña Hernández	Staff Member	Project 2 ICTSYS
José Antonio Sánchez Mayáns	Staff Member	Project 2 ICTSYS
Eduardo Salazar Martínez	Staff Member	Project 2 ICTSYS
Leonel Salazar Videaux	Staff Member	Project 2 ICTSYS
Orestes Coloma Rodríguez	Representative RED-TIC UHO	Project 2, 3, 4 ICTSYS-ELINF-PSUP
Rosa Margarita Rodríguez Fernández	Focal Point	Project 3 ELINF
Carlos Batista Matamoros	Expert en Competitive Intelligence	Project 3 ELINF
Ronal Tamayo Cuenca	Moodle National Coordinator	Project 3 ELINF

Name	Position	Project
LiuberAlvarez Hernández	Moodle Expert	Project 3 ELINF
Osvaldo Tejeda Tamayo	Moodle Developer	Project 3 ELINF
Carlos Arguellez Hernández	Moodle Expert	Project 3 ELINF
Yindra Rodríguez Bauza	Moodle Expert	Project 3 ELINF
Ricardo Daniel Varona Domínguez	Moodle Expert	Project 3 ELINF
Noemí Alvarez Márquez	Moodle Expert	Project 3 ELINF
Nelvis Reyes Fernández	Dspace & ABCD Coordinator	Project 3 ELINF
Jakeline Fernández Ferrer	Dspace Expert	Project 3 ELINF
Yoanny Carrión Lescay	ABCD Expert	Project 3 ELINF
Paula García Rodríguez	Dspace Expert	Project 3 ELINF
Marbelis Batista Espinosa	ABCD Expert	Project 3 ELINF
Eugenio Almaguer Rodríguez	Dspace Expert	Project 3 ELINF
Redel Pérez Pupo	ABCD Expert	Project 3 ELINF
NiurkaPortelles Hernández	Dspace Expert	Project 3 ELINF
Marianela Juana Rabell López	Dspace & ABCD Coordinator	Project 3 ELINF
Anabel LaOBacallao	Dspace Expert	Project 3 ELINF
Elizabeth Mayo Parra	Dspace Expert	Project 3 ELINF
Zaimar Mora Pérez	Dspace & ABCD Coordinator	Project 3 ELINF
Yoldis Mayo Batista	ABCD Expert	Project 3 ELINF
Elizabeth Ayala Torres	Dspace Expert	Project 3 ELINF
Karel Cuenca Ricardo	PETIC Expert	Project 3 ELINF
Yovany Aguilera Serrano	Dspace Expert	Project 3 ELINF
María Amelia Rivera Parra	ABCD Expert	Project 3 ELINF
Iris Benítez Ávila	Dspace Expert	Project 3 ELINF
Cruz Dalia López Sánchez	Dspace Expert	Project 3 ELINF

UNIVERSIDAD CENTRAL "MARTA ABREU" DE LAS VILLAS (UCLV)

Name	Position	Project
Maria M Garcia	Science & technology Director, UCLV	Project 1 - RESICT
Yailen Martínez	ICT Department, UCLV	Project 1 - RESICT
Yanet Rodríguez	Dean, UCLV	Project 1 - RESICT
Vitalio Alfonso	Teaching Staff	Project 1 - RESICT
Juan Lorenzo Ginori	Teaching Staff	Project 1 - RESICT
Carlos Ferrer	Teaching Staff	Project 1 - RESICT
Alberto Taboada	Teaching Staff	Project 1 - RESICT
Richar Sosa	Joint PhD	Project 1 - RESICT
Carlos García Algora	Joint PhD	Project 1 - RESICT
Ivette Fuentes	PhD Student	Project 1 - RESICT
Marilyn Bello	PhD Student	Project 1 - RESICT
Idileisy Torres	PhD Student	Project 1 - RESICT
Isel Moreno	Teaching Staff	Project 1 - RESICT
Leticia Arco	Teaching Staff	Project 1 - RESICT
Marlen Pérez	Teaching Staff	Project 1 - RESICT
Reinier Millo	PhD Student	Project 1 - RESICT
Yaime Fernández	PhD Student	Project 1 - RESICT
Leidys Cabrera	PhD Student	Project 1 - RESICT
Ernesto Perez Pelaez	Expert BigData	Project 2 - ICTSYS
Jorge Armando Potal	ICT Security Expert	Project 2 - ICTSYS
Carlos Rafael Herrera	Developer	Project 2 - ICTSYS
Enier Ramos Garcia	HPC/Developer	Project 2 - ICTSYS
Manuel Oliver Dominguez	Network Administrator	Project 2 - ICTSYS
Héctor Cruz Enriquez	Local Coordinator, Central ICT Director	Project 2, 4 – ICTSYS & PSUP
Grizly Meneses Placeres	Focal point	Project 3 - ELINF
Nancy andreu gomez	Member (e-learning)	Project 3 - ELINF
Manuel osvaldo mach ado rivero	Member (dspace)	Project 3 - ELINF
Luis Daniel Hdez	Member (dspace)	Project 3 - ELINF
Amed Leiva Medero	Member (ABCD)	Project 3 - ELINF
Luis Antonio Barranco	Vicerector	Project 4 - PSUP
Andres Castro Alegría	Rector	

Name	Position	Project
José Antonio Marimón	Vicerector	
Ernesto Alvarez Guedes	Projects & Events Department	
Alina Montero Torres	International Relations Director	
Milagros Sarduy Valdez	Networking Expert	
Marili Martín García	Programme Manager	Project 4 - PSUP
Luis Felipe Pérez Pérez	Logistic Expert	Project 4 - PSUP
Olga Sardinas Tapia	Programme Secretary	Project 4 - PSUP
Carmen Estevez Walls	Programme Accountant	Project 4 - PSUP

3.4 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 UCLV, UPR, UCI, UHo and UC
- Internal Evaluation docs from UCLV, UPR, UCI, UHo and UC
- Different documents from local stakeholders for Case Studies

3.5. Online questionnaire – Individual Impact

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Proyecto de Red coordinado por la Universidad Central "Marta Abreu" de las Villas

Cuestionario para participantes en acciones formativas

1. Género

- ◯ Hombre
- ◯ Mujer

2. Edad

3. Universidad o institución en la que trabaja

VLIR - NETWORK @ UCLV

4. ¿En qué tipo de acción formativa o 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?

VLIR - NETWORK @ UCLV

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

3.6. KRA Indicators by project

P1. RESICT

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	25	35	50	BV-total in the 5 univ in 2012. ITV-increment due to the project in five years (2014-18) FTV-real increment due to the project in 4 years
	Articles in national peer reviewed journals	30	35	39	
	Conference proceedings (full paper)	18	30	42	
	Conference abstracts				
	Chapters in books (based on peer review)	3	9	10	
	Books with international distribution (author or editor)				
	Working/technical papers/popularising literature/articles in national journals, electronic journals etc.				
	Conference contributions (posters, lectures)	3	10	20	
	Patents.				
	Other	8	16	26	Research awards
Capacity Related Indicators					
KRA 2. Teaching	Courses/training programmes developed	0	18	26	BV-number of courses developed in the 5 univ in 2012 by Flemish faculties ITV- number of courses developed in the 5 univ during 2013-17 supported by the project FTV- real courses given in 2013-17.
	New or substantially updated curriculum				
	Textbooks development				

	Learning packages developed (distance learning, CD-rom etc.)				
	Laboratory manuals				
	Excursion guides				
	Accreditation (labs, programmes etc)	8	15	21	BV-number of programs accredited in the 5 univ in 2013. ITV-number of programs accredited in 2017 FTV-real number of accredited programs in 2017
	Other				
KRA 4: Management	New institutional procedures / policies				
	Lab or departmental management inputs				
	Systems development (e-management, software etc.)				
	Research protocols	9	15	32	
	Awareness, sensitisation campaigns etc.				
	Business plan				
	Other				
KRA 5: Human resources development	Bsc.				
	Msc.				
	Phd.	6	15	24	BV-number of PhD defended in 2012 ITV-number of PhD supported by the project directly FTV-real PhDs supported
	Pre-doc				
	Training in Belgium (technical, adm, …)	0	25	31	BV-trainings supported in 2012 ITV-trainings to support FTV-trainings supported
	Other				
KRA 6: Infrastructure Management	Computer Rooms				
	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	0	4	4	
	Audio visual extension materials				
	Consultancy				
	Policy advice/papers				
	Other				

P2. ICTSYS

Key Result Areas	*Indicators (quantitative and full descriptive data)*	*Baseline value*	*Initial target value*	*Final total value (achieved until AP2017)*	*Comment on the evolution (if any)*
Capacity Related Indicators					
KRA 2. Teaching	Elaboration of technical guides, manuals and procedures to migrate IT services to Free software technologies.	0	3	2	One must be complete in AP2018
KRA 4: Management	New institutional procedures and ICT policies	0	5	6	
KRA 5: Human resources development	Organization of short visits of Cuban staff to Flemish universities for exchange of experiences and for training.	0	29	25	6 more for AP2028
	Local Workshops	0	3	3	One extra on AP2018
	Workshops and trainings supported by MES, MIC or other (co)funding's.	0	6	6	
KRA 6: Infrastructure Management	ICT equipment installed				
	Open ICT systems developed and deployed	0	5	5	LUPA – UPR WIFI – UCLV ANDROID – UCLV WIKI – UCLV CUENTAS – UCLV
	New networks connected		+15	21	The extra is due to "Integración"
	Kilometres of cooper based links		+2	3	
	Kilometres of optic fibre based links		+10	4	6 more for AP2018
KRA 7: Mobilisation of additional resources/opportunities	Flemish travel grants				
	Flemish PhDs				
	Other PhDs				
	Spin off projects		3	2	DevOpsDays Cuba HPC with BiocubaFarma
	other				

Extension Related Indicators					
KRA 3: Extension and outreach	Elaboration of technical guides, manuals and procedures to migrate IT services to Free software technologies.	0	6	6	Proxmox as virtualization solution, Exim as email server, Docker for Intranet, Quota for SQUID, Zimbra in Cluster, Nexus For AP2018 Gitlab with CI
	Development of workshops on Free Software technologies	0	0	2	DevopsDays Cuba 2016 & 2017
	Free software experts are attracted to give presentations and seminars.	0	5	12	Most of them in DevopsDays Cuba

P3. ELINF

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	17	25 (17+8)	7	
	Articles in national peer reviewed journals	23	37 (23+14)	6	
	Conference proceedings (full paper)	10	16 (10+6)	18	
	Conference abstracts	15	27 (15+12)	1	
	Chapters in books (based on peer review)	0	4	0	
	Books with international distribution (author or editor)	0	1	0	
	Working/technical papers/popularising literature/articles in national journals, electronic journals etc.	0	1	0	
	Conference contributions (posters, lectures)	0	0	5	
	Patents.	0	0	0	
	Other	0	0	0	

Capacity Related Indicators					
KRA 2. Teaching	Courses/training programmes developed	0	0	14	
	New or substantially updated curriculum	0	0	1	
	Textbooks development	0	0		
	Learning packages developed (distance learning, CD-rom etc.)	5	9 (5+4)	10	
	Laboratory manuals	0	0	6	
	Excursion guides	0	0	1	
	Accreditation (labs, programmes etc)	0	0	0	
	Other	0	0	0	
KRA 4: Management	New institutional procedures / policies	0	2	17	
	Lab or departmental management inputs	0	0	1	
	Systems development (e-management, software etc.)	0	0	5	
	Research protocols	3	6 (3+3)	8	
	Awareness, sensitisation campaigns etc.	0	0	0	
	Business plan	0	0	0	
	Other	0	0	0	
KRA 5: Human resources development	Bsc.	0	0	8	Cuba (UCI, UHOLM, UCLV, UPR)
	Msc.	235	266 (30 in Cuba and 1 in Belgium)	4	Cuba (UH[6], UCLV, UCI UHOLM)
	Phd.	24	28 (1 Joint PhD.)	1	Still in PhD study at Belgium (VUB) with final dissertation planed for AP2018
	Pre-doc	0	0	2	Belgium (VUB-UHasselt)
	Training in Belgium (technical, adm, …)	4	6 (4+2)	10	Technical Training
	Other			3	Technical Internships
KRA 6: Infrastructure Management	Computer Rooms	0	0	5	
	Laboratories	0	0	1	
	Classrooms	0	0	1	
	Libraries	0	0	4	All libraries at UHOLM had been improved using infrastructure funded by the ELINF project

[6] University of Havana (UH).

	Other	0	0	0	
KRA 7: Mobilisation of additional resources/opportunities	Flemish travel grants	0	0	8	
	Flemish PhDs	0	1	2	Belgium (VUB)
	Other PhDs	0	2	1	Spain (UGR)
	Spin off projects			3	Cuba (UHOLM)
	other	0	1	0	
Extension Related Indicators					
KRA 3: Extension and outreach	Leaflets, flyers or posters for extension	0	0	0	
	Manuals or technical guides	0	0	4	
	Workshop or training modules package	2	5 (2+3)	2	
	Audio visual extension materials	3	9 (3+6)	36	
	Consultancy	0	0	2	
	Policy advice/papers	0	2	2	
	Other	0	0	0	

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

Strengthening the ICT role in Cuban Universities for the development of the society - 2018

Programme level

General appreciation

The evaluation process allowed us to enrich our monitoring system for the evaluation of the out-comes and impact of the programme with the inclusion of new metrics and indicators of progress in view to the formulation of the second phase. During formulation all team groups proposed quantitative and qualitative indicators for further monitoring. Those qualitative were indicated to include an evaluation survey to final users.

The evaluation document pointed out key elements related to sustainability that have been taken into account. All projects included specific objective aimed toward sustainability actions coordinated at Programme level to boost TTO creation at partner universities.

The analysis made to recommendations from the midterm evaluation was presented at the Joint IUC/NETWORK 2nd phase formulation kick-off workshop at University of Oriente for open discussions and brain storming. Answers presented were the results of first discussions in each project and later during the preparation of this mission in Belgium. Final results of this analysis helped us to elaborate and enhance proposed actions here included in the present formulation.

Follow-up on recommendations

Recommendation 1:	Second phase should be focused on the integration of the different data silos.
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
As planned already in phase one, each project will consolidate work, as a first Specific Objective with planned results:	
- RESICT: consolidating capacity, sustainable doctoral and special schools, including industrial related research.	Underway

- ICTSYS & ELINF: continuation of capacity building, further development and integration of platforms	Underway

Recommendation 2:	The creation of services in the platforms based on the global network data and Encourage an accountability culture in order to mitigate the associated risks to staff changes or intangible assets loss (software).
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
These services will help us to disseminate results internally and externally by the creation of newsletter(s), web platforms aimed to Cuban industrial users, other Cuban VLIRUOS projects and NGO based organisations, etc. This will be part of specific results aimed towards their dissemination:	Not started
Resict: making all courses available in the existing platforms, translation of research results to the society	Not started
ICTSYS & ELINF: documenting all policies, trainings and procedures for internal and external use	Not started
each project will chose better and controllable indicators in order to ease monitoring and evaluation	Not started

Recommendation 3:	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
Special school has been already opened this year promoting the international students participation	Underway

Recommendation 4:	Intensify the interaction with Industry by developing ad-hoc courses and promoting a good mix of basic and 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

The implementation of Joint labs at partner universities has been foreseen in 2nd phase. This new structure should increase innovation, applied research and natural knowledge transference.	Not started

Recommendation 5:	Create successful technology transfer offices in all our universities
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
Coordinated by PSU, NETWORK programme will promote the creation of TTO at partner universities. Some actions (seminars, proposed experiments, meetings with university authorities) are already in place to boost its creation. The above actions could help to generate some incomes from external funds that in agreement with partner universities (through TTO) would improve work conditions and prolong stays in Belgium helping us among others to increase retention of staff.	Not started

Recommendation 6:	Boost participation in research and other funding calls and increase the link with other cooperation programs for development actors
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
Other actors like UNESCO and FAO have already been contacted and some combined activities are planned during the running AP2018. Stakeholders were invited to the formulation process (Human Inclusion - HI, Biocubafarma, Desoft) in order to enhance the 2nd phase programme goals and outputs.	Underway

Recommendation 7:	Improve Training selection process
Management Response (Agree, partially agree, disagree)**:**	Partially agree
If recommendation is rejected or partially accepted, report reasons:	The NETWORK programme has a procedure or management manual accepted by all partner universities. It specifies transparent rules for the selection of candidates for short training or PhD scholarships. These rules were always applied. During 1st phase we only experienced one problem, but the initial candidate was not selected by the network programme, but by a Flemish team member. That´s true that some universities didn't use the opportunity to nominate candidates.

	We transmitted these remarks to the evaluators.

Actions Planned /Actions taken + timeframe (action finalised)	**Implementation stage** (not started, underway, completed
In order to avoid similar problems we already added some rules to the existing procedure by enlarging the group of candidates.	Underway

Recommendation 8:	Increase the Budget, make it more flexible, and simplify procedures
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
It was a recommendation for VLIR. During the evaluation, evaluator use the same rules to evaluate the NETWORK and Oriente IUC programme. Our Network works with 5 universities, and has less than ½ of the budget of an IUC with just 1 university. We understand that increasing our budget is difficult for VLIR but we hope to attract supplementary funds by applying for extra projects, team or JOINT with Cuban partner or other universities. The new Global Mind solution managed by each Flemish university doesn't help to promote Flemish cooperation for these purposes. (crosscutting from the past)	Underway

Project 1: Strengthening the research on ICT and its knowledge transference to the Cuban society

Follow-up on recommendations

Recommendation 1:	Increase the actions to the sustainability of the project.
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
To develop a research task more valuable for the society.	Underway.
To increase of alternatives to improve the qualification of human resources.	Underway.
To support the implementation in universities of some structure to increase the innovation and knowledge transfer.	Not started.

Project 2: Open ICT Systems and Management (ICTSYS)

Follow-up on recommendations

Recommendation 1.2:	Create conditions for capturing international students / Developing ad-hoc courses for Industry
Management Response (Agree, partially agree, disagree)**:**	Agree
If recommendation is rejected or partially accepted, report reasons:	

Actions Planned /Actions taken + timeframe (action finalized)	**Implementation stage** (not started, underway, completed
Some events are in the second phase plan with the option for international participation in order to get extra funds.	underway
The program encourages to partner units involved in the project to create services and courses to external clients. The project will provide support for some of these activities.	underway

Recommendation 2.4:	Improve Training selection process
Management Response (Agree, partially agree, disagree)**:**	Agree.
If recommendation is rejected or partially accepted, report reasons:	

Actions Planned /Actions taken + timeframe (action finalized)	**Implementation stage** (not started, underway, completed
Some trainees were not able to participate in the past due to delays in the approval process (administrative) within their university. The project leader will inform 4 months in advance about any change for futures trainings.	underway
All training will take place in February coinciding with FOSDEM and Configuration Management Camp in Belgium.	underway

Recommendation 2.3:	Encourage an accountability culture / Mitigate risks of changes of staff
Management Response (Agree, partially agree, disagree)**:**	Agree
If recommendation is rejected or partially accepted, report reasons:	

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

To agree in advance some metrics and indicators to measure quality in the offered services.	underway
Results from training and workshops must be published in the project's wiki.	underway

Project 3: ICT supporting the educational processes and the knowledge management in higher education (ELINF)

Follow-up on recommendations

In the midterm evaluation report of February 2018, only appears recommendations at Network level, while there is no one at project level. However, we can take out the following specific recommendations for the project from those mentioned at the Network level.

Recommendation 1:	The second phase should be focused on the integration of the different data silos and the creation of services in the platforms based on the global network data. Services related with technology offer and relationship with industry stakeholders should be prioritised in order to contribute to the sustainability of the actions.
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
To develop IT and knowledge capacities in the participant universities to use professional services associated with the Technological Ecosystem of the Network.	Underway
To produce open digital educational resources and contents to support the education and science processes over the Technological Ecosystem of the Network.	Underway
To support the creation of labs at every university to offer and use professional services to society and industry.	Not started
To invite stakeholders to the technical and conceptual discussions and trainings about the realization of interoperability solutions to support open science and education approach.	Underway
To invite stakeholders from industry to participate in the IT solutions developments with co-proprietary benefits.	Not started

Recommendation 2:	To encourage universities to develop an accountability framework which may support the quality assessment and transparency of their activities.
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
To start the collection of quantitative data (indicators) associated with all the IT services and users of those services given by all the member universities inside and outside their campuses.	Underway
To set up a new indicators framework for the project in order to better evaluate the outputs and outcomes during phase two.	Underway