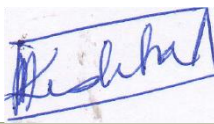




Call Institutional University Cooperation (IUC) 2022

GENERAL INFORMATION

Programme information	
Country and region of the programme	
Democratic Republic of the Congo, Katangese copperbelt region (Upper Katanga and Lualaba provinces)	
Programme title (linked to strategic/thematic focus area)	
Challenges and opportunities for a sustainable socio-ecology in the Katangese Copperbelt Area	
Programme Summary (Focus of proposed strategic area(s) and institutional strengthening activity)	
<p>Between 2003 and 2018, the DRC has experienced an average economic growth of 5%, which was mainly driven by the Katangese copper and cobalt sector, accounting for more than 80% of the country's export earnings. It is well known, however, that this growth has not trickled down to the majority of the population. Despite being the engine for the country's growth, poverty and inequality remain high in the Katangese Copperbelt Area (KCA¹). The population faces many challenges related to food safety and food security, health and environmental pollution, poor governance and physical insecurity. Moreover, the exploitation of mineral resources (in large-scale and small-scale operations) has severe consequences for the sustainable management of natural resources. By providing adequate training and building stronger multi-disciplinary research capacities, UNILU, together with the local stakeholders, could make a significant contribution towards improving the situation, but lack of public funding has so far prevented UNILU from fully taking up this role. Through adequate training, the creation of specialized Master programmes and an Environmental Observatory (within which existing specialized research centres will be integrated and others will be created), the enhancement of a critical mass of research leadership via PhD-qualified researchers, service to society and professionalization of the bachelor cycle, the IUC programme will co-design and improve, by 2032, an interdisciplinary socio-ecological framework regarding biodiversity and climate change, environment, urbanization, health, governance, security, entrepreneurship, agro-pastoral sector and communities' productivity and job training.</p>	
Applying partner university (institution and proposed local coordinator)	
Full name of the institution (+ abbreviation)	University of Lubumbashi (UNILU)
Name of the local IUC coordinator	César Nkuku Khonde
Name of the authority of the local university (Rector, Vice-Chancellor, President,...)	Gilbert Kishiba Fitula
Applying Flemish university (institution and proposed Flemish coordinator)	
Full name of the institution (+ abbreviation)	Hasselt University (UHasselt)
Name of Flemish IUC coordinator	Virginie BITO
Signature of the authority of the local university (Rector, Vice-Chancellor, President,...)	
	
Signature of the coordinators (Flemish and local IUC coordinator)	
	

¹ A list of abbreviations can be found at the end of this document.

PROGRAMME DESCRIPTION

1. Background & context

How was this extended concept note developed? How did you take into account the comments of the selection commission (selection stage 1 – concept Note South)?

Faced with the multiple challenges surrounding the region's exploitation of natural resources, having negative repercussions on the population's socio-ecological conditions and ecosystem services, UNILU is anxious to improve the above-mentioned conditions with UHasselt as main partner. To ensure that the different axes of the problem are taken into account, professors from UGent and UAntwerp (with expertise complementary to that of the UHasselt partners) joined the team during the formulation of this extended concept note. The first discussions took place during a workshop organized on 12.03.2020 at UNILU, at the end of which a small team (whose members were contacted on the basis of their specialisations; only those who were available ultimately worked on the proposal) headed by Prof Nkuku was set up and entrusted to write the extended concept note. As the IUC programme cuts across several sectors of UNILU activities, teacher-researchers from different UNILU faculties were involved from the start and during the whole development of the concept note. Initially, 4 academic projects covering (i) biodiversity, climate change, environment and health; (ii) governance and security; (iii) entrepreneurship; (iv) climate smart agriculture for sustainable food systems, as well as one transversal project (institutional capacity building) were identified. Subsequently, drafting teams for each project were set up and local team leaders were designated. Travel to Lubumbashi from already involved North Partners (from UHasselt and UGent) to further elaborate on the extended concept note, definition of the different aspects and establishment of a working strategy was planned and organized in April 2020. However, due to the Covid-19 pandemic, the North coordination team (Virginie Bito, Jean-Michel Rigo, and Liesbeth Oeyen from UHasselt; Pascal Boeckx and Geert Baert from UGent) were not allowed to travel and to stay in Lubumbashi. The pandemic also affected the work of the local teams, who were unable to physically meet between mid-March and mid-May as a result of the closing of Congolese universities. The discussions on the extended concept note continued, however, including several email and video conference exchanges with the North partners. In brief, the South partners drafted several projects and sent them to the North partners for feedback. Through extensive shared documents and exchanges, the South coordination exchanged with the North coordination on its proposal to have 6 projects within the IUC programme. As Project 1 initially proposed by the South partner was complex, the North partners suggested splitting the former Project 1 (biodiversity, climate change, environment and health) into two projects (biodiversity and climate change; and environment and health), thus increasing the number of academic projects from 4 to 5. The total number of projects within the IUC programme increased from 5 to 6. For the sake of efficiency, Prof. Nkuku, the South coordinator of the programme, asked each team to use the first concept note (including the overall assessment of the VLIR-UOS selection commission on the latter) and afterwards the proposals were discussed with the North team. Locally and between the North and South coordination, discussions on the drafting of this note were fleshed out via e-mail exchanges and video conferences. Once the different projects were drafted in the South (in April 2020), they were gradually sent to the North for additional feedback. In addition, the context of the different projects included in the IUC programme addresses the challenges of development in the Katangese Copperbelt Area (KCA) through a better understanding of the socio-ecological complexity. To search for solutions, the problems encountered in the KCA were first identified in collaboration with local stakeholders: the vicious circle between deforestation-shifting agriculture and charcoal production-food insecurity is an illustration. The development of the different projects was elaborated according to the current expertise / scientific skills of UNILU and will be further strengthened through training of new academic expertise in the context of the proposed IUC programme. Enhanced academic research leadership will support, on the one hand, the methodological and technical training of the public services responsible for the sectors covered by this IUC programme. On the other hand, UNILU, in collaboration with the public services, will produce decision support tools for decision-makers. Finally, the role of other stakeholders, notably NGOs and civil society, in the transmission of knowledge produced by UNILU researchers to the KCA populations has been highlighted in all academic projects. The transmission of this knowledge will go through more traditional (such as conferences) as well as more novel channels (such as social media, radio and television) in order to reach a large audience. Finally, this IUC programme aims to create task forces or consultation frameworks with local stakeholders which will deal with the definition of the project, the operational organisation and the rules of the dialogue.

As recommended by the selection commission, synergy with projects developed by ARES-CCD, VLIR-UOS, ERASMUS, EU Pan African Programme (intra-Africa Academic Mobility Scheme) and other donors (such as the African Development Bank) has been further developed and emphasized in the current IUC programme. We have made a list of projects financed by VLIR-UOS, ARES-CCD and other donors (UNICEF, BTC, MRAC, Meise Botanical Garden, CIRAD, GIZ, AUF, EU...) and highlighted the synergy/complementarity of these projects with the current IUC programme (in the fields of health, biodiversity, climate smart agriculture, governance, human resources management or the environment). For example, VLIR-UOS has financed the establishment of a quality assurance unit (in Teaching and Governance of Administration at UNILU) at the central administration level. This service, which is highly centralized, is struggling to effectively function and to be visible at the faculty level. The IUC programme thus aims to implement and improve the operationalization of this service at the faculty level. The

institutional support programme of ARES-CCD (which just ended in 2019) assisted UNILU in the creation of a research support office and a continuing education unit. The present IUC focusses on their organization and operationalization. Through the projects proposed in the VLIR-UOS IUC programme, the various external domains of change announced in the pre-project have been clearly defined. For instance, project 3 on governance and security identifies the various challenges that hinder the sustainable use of natural resources and the improvement of environmental quality (poor management and lack of transparency, insufficient institutional capacity, bad business climate, and fundamental deficiencies in terms of governance). This project will, therefore, focus its research on the above-mentioned challenges in order to sufficiently equip the public services and NGO/CSOs, responsible for the management and control of natural resource exploitation, in order to raise awareness of good practices among operators. UNILU, thanks to its in-depth knowledge and understanding of the local context and its long-term collaboration with the different stakeholders as well as the beneficiaries and end-users, will enable the IUC programme to achieve a multiplier effect. UNILU will interact continuously with the final beneficiaries (through the advisory board, task forces, consultation frameworks, etc.) during the implementation of the project and will ensure that they receive the necessary training on how to apply the new technologies and knowledge developed. The fact that mining and logging operators acquire large concessions of which they exploit only small portions reduces the amount of land available to the local population, which generally leads to land conflicts and brings additional challenges in terms of liability and environmental justice; these aspects have been tackled in project 3 of this extended concept note.

Provide a local context analysis, highlighting key development problems, their context, importance and underlying causes. Take into account the transversal themes gender and environment in this analysis. Update the local context analysis. If no important changes took place, you may leave this section unchanged.

The mining sector, and in particular the KCA, has been the engine of the Congolese economy since colonial times. In the mid-1970s, Gécamines accounted for about 70% of all state revenues. After years of political and economic crisis and a decade-long war, the Katangese mining industry recovered in the 2013-2018 period thanks to a combination of internal (new Mining Code stimulating foreign direct investment) and external factors (booming commodity prices). Alongside large-scale industrial mining, Artisanal and Small-scale Mining (ASM) also boomed, mainly driven by high prices and a surge in global demand for cobalt - a critical mineral for the production of lithium-ion batteries. Yet despite a sustained average economic growth of 5% in the 2013-2018 period, this growth has not trickled down to the majority of the population. Poverty and inequality remain high, and the DRC currently ranks 179 (out of 189) on the Human Development Index (UNDP, 2019). At the same time, a small political and business elite has been able to disproportionately profit from some mining contracts, which points to serious governance problems (The Carter Center, 2017). The most recent mining boom has thus produced a number of adverse economic, social, ecological and health effects. This calls for a holistic understanding of the problems. The KCA extends from Sakania to Kolwezi, a 300 x 100 km strip (Figure 1). In this region, large-scale mining quarries are sometimes located on the outskirts of cities, while processing is generally carried out in factories located in urban areas. The most recent mining boom has been accompanied by a massive influx of people to the main cities and towns of the KCA (Sakania, Lubumbashi, Kipushi, Likasi, Kambove, Fungurume, Kolwezi). The presence of a mixed and diverse urban and rural population around the mines creates competition, for instance around access to land and other natural resources. It should be noted that KCA is an area with a rapid demographic growth (a lot higher than the demographic growth in DRC in general) due to various factors including new births, rural exodus and the succession of wars in the East of DRC that has led to an influx of internally displaced persons. The whole area currently has more than 15 million inhabitants. Many of those are directly or indirectly dependent on mining: they may work in industrial mining or ASM (without mechanized equipment) projects, provide services to mining operators (whether industrial or artisanal), work in administration or legal services regularly interacting with mining operators, or be affected by indirect spill-overs generated by mining operations. This dependence has been demonstrated, once again, during the recent Covid-19 pandemic, when falling commodity prices and disrupted supply chains have caused companies to slow down production and lay off workers (Reuters, 2020). Women, who represent about half of the labor force in and around the mines (working as transporters, washers, service providers, sex workers etc.), are particularly vulnerable to poverty since they are doing the jobs that are the least remunerated. In addition, women are exposed to severe instances of gender-based violence. Many children are also working in the artisanal mines (20,000 in 2007 and 40,000 in 2014), in jobs that are very poorly paid, and that severely impact their health, as well as their chances to get a proper education (ACC-DRC, 2015; Weerts, 2015). Nevertheless, in 2019 more than 14,000 children are reported to be present at mining sites in Upper-Katanga and Lualaba provinces, constituting the KCA. These problems related to child labor, gender inequality, labor exploitation, human rights violations and conflict in ASM have caught the attention of the international community. Following the OECD Due Diligence Guidance and 'conflict minerals' legislation adopted in the US and the EU, several supply chain initiatives for 'clean minerals' have been set up. Initially focused on Eastern DRC and applying to 3TG minerals (tantalum, tin, tungsten and gold), these initiatives are increasingly looking at the KCA, especially at cobalt. Although cobalt is not considered a 'conflict mineral' at the moment, human rights violations and exploitative labour issues are forcing global buyers to come up with solutions to source 'responsible cobalt'. For Eastern DRC, however, several critical studies have pointed to a number of adverse effects, including a *de facto* embargo leading to mass unemployment and further informalization (Geenen, 2015; Stoop et al., 2018). Therefore, it is important to closely follow up on this. Another phenomenon that needs to be monitored is the increasingly violent repression of artisanal mining activities by industrial operators (Cuvelier, 2020).

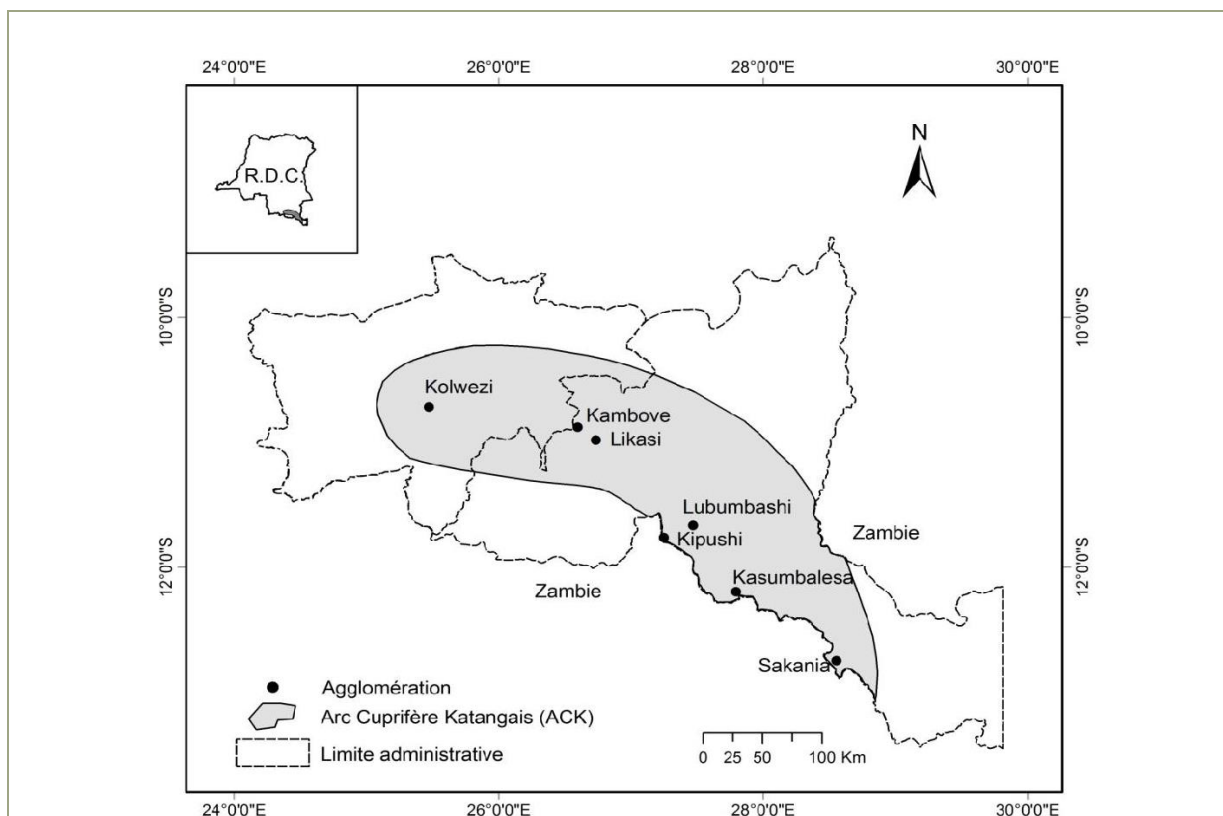


Figure 1. Approximate delimitation of the KCA on the basis of geological maps (Cabala et al., 2017).

The environmental degradation caused by mining activities, shifting agriculture, urbanization, charcoal production, etc. is also a major problem. The settlement of thousands of people in the middle of the forest has an impact in terms of ecosystem degradation, pollution (water, air, landscape) and deforestation of the *Miombo* woodland. The latter represents 20% of DRC forest formations and is home to about 8,500 plant species and more than 5,000 animal species. It provides several goods and (eco-) services and directly supports the livelihoods of millions of people in rural and urban areas of the KCA. In particular, the *Miombo* woodland meets the nutritional, material, energy and medicinal needs of the populations including protected areas adjacent to mining towns. Unfortunately, the development of mining activities often leads to profound environmental changes. It deeply modifies the functioning of (agro-) ecosystems and leads to loss of biodiversity and soil degradation. The degraded soils lose their fertility and agricultural productivity, leading ultimately to food insecurity in the KCA. In addition, mining activities often pose a threat to human health through exposure to toxic compounds. This is particularly problematic in the KCA, where the total concentration of trace elements in soils around mining sites is generally much higher than in areas without mining activities. As a result, it has recently been shown that populations in areas surrounding mining sites have higher levels of cobalt and copper in their urine than those permitted by the World Health Organization, compared to remote areas. They also display severe neurological and cardiac problems irrespective of age or gender (Malamba et al., 2018). Women who engage in gardening for market in mining concessions see their crop yields drastically reduced due to soil and water pollution. In addition, women involved in mineral cleaning along rivers, sometimes with their children on their backs, are more exposed to trace elements or uranium-derived radiation. In short, due to the inhalation of dust containing metallic trace elements, women and children living along mineral transport routes are more exposed to toxicity of metallic trace elements. The above-mentioned problems should in principle be addressed by an effective implementation of the Mining Code and Mining Regulations. However, this implementation faces severe shortcomings, which are mainly due to a lack of human and financial resources of the responsible government services, a lack of technical capacities among their technical services, corruption and illegal taxation at local and (sub)national levels, opaque management of mining royalties, and a prioritization of industrial large-scale mining above ASM. Altogether, the situation is detrimental to the sustainable governance of natural resources inside the KCA.

Provide an institutional context analysis, highlighting strengths and capacity constraints / needs of the institution. Take into account the transversal themes gender and environment in this analysis. Describe the position of your university in the national higher education landscape. Update the institutional context analysis. If no important changes took place, you may leave this section unchanged.

UNILU is the second Congolese public university based on UNIRANK in terms of number of students (~22,000), researchers (1460) and professors (435). UNILU is the second largest public university in the DRC after the

University of Kinshasa (UNIKIN) and ahead of the University of Kisangani (UNIKIS). UNILU is also one of the 3 public universities (with UNIKIN and UNIKIS) that organize third-cycle programmes in the DRC (DEA, PhD). The university inherited significant infrastructure built mainly during the colonial era. In the former province of Katanga, UNILU is the largest and oldest university. UNILU has 11 faculties, 4 high schools and 1 pre-university and provides teaching staff to other public and private universities. It also counts 55 laboratories, which have low capacity and are poorly equipped, 15 research centres spread over all faculties/high schools and 10 research units spread over two faculties among those operating in the LMD system (bachelor-master-doctorate), UNILU offers a wide range of training opportunities to Congolese as well as foreign (4% of student population) students and professionals, and awards at least 3000 Master degrees annually. UNILU has already internationalized its research by developing a network and partnerships with various universities, organizations and companies around the world (e.g. MMG, FAO, UNICEF, World Vision, GIZ, EU, World Bank, Belgian universities, MRAC, IRSNB, ETH Zurich, ULaval...). These collaborations allow the initiation of joint research and development projects and strengthen the exchange of experiences and good practices leading to co-publications in renowned international journals (such as Science, Ecological Engineering, etc.). However, the university training currently available at UNILU is inadequate to meet its scientific needs. In December 2019, the average ratio was almost 50 (i.e. 1 professor for 50 students, although this ratio varies from 5 students per professor in Veterinary Medicine to about 200 students per professor in the Faculty of Law). This situation emphasizes the urgent need to triple or even quadruple the number of academic staff, taking into account gender in recruitment and promotion. In this context of academic staff needs, the current number of female professors, assistants and project managers is low (only 5.3% of women have a PhD) and deserves to be increased. The shortage of UNILU professors means that there is a shortage of scientific staff capable of proposing technical innovations and scientific leadership. Therefore, the few actions taken to promote sustainable management of environmental and socio-economic conditions of the populations living within the KCA have so far been implemented without scientific support of experts in the field, which entails various risks such as non-contextualized actions, especially stillbirths and so on. However, for long-term sustainability, it is necessary to integrate these actions into an overall plan. This implies strengthening the capacities of the provincial technical services and the development of UNILU's scientific expertise in mining challenges for sustainable development. So that stakeholders in the socio-economic life of the KCA (farmers, decision-makers, inhabitants, etc.) are encouraged to implement sustainable natural resource exploitation and management practices. In addition, the development of research and teaching infrastructures is very slow and limited. UNILU is characterized by weak governance, insufficient funding mechanisms and insufficient evaluation and performance culture. The research is not well coordinated, which leads to a dispersion of the limited financial resources available. Libraries are not connected to online journals or to the Web of Science and do not always have recent specialized books, and their capacity is insufficient to provide high-quality services to all students. The LMD system, launched in 2012, was introduced so that students trained at UNILU would not only be jobseekers but would potentially create jobs and thus wealth. But, the adoption of this new system by the faculties is still slow (due to lack of funding, limited infrastructure and a high number of students) and only 30% of faculties have been operating under this system for the last 7 years.

In order to ensure rapid training of PhD-qualified researchers, UNILU must rely on its laboratories and research centers, where unfortunately there is a glaring lack of not only quality but also quantity of technical staff. As a matter of fact, the technical and managerial capacity and equipment of laboratories is also insufficient and needs urgent strengthening. There is also a need to create new laboratories and research centers specifically focused on the local environment and context, namely the mining environment and the governance of renewable natural resources and their impact on climate change, health, food security and socio-economical life. In addition, environmental protection and sustainable development are major issues for the KCA, while at UNILU no faculty explicitly organizes an environmental science and technology programme. To correct for this lack, it is essential that UNILU develops the advanced masters in "Environmental Sciences and Technology", "Natural Resources Law", and "Agro-Ecology" based on foreign models, but adapted to the local context. Thanks to these programmes, UNILU will increase its international exposure and capacity to attract international experts as guest lecturers. These master programmes will have two purposes: professional (professional training) and research (training of teacher-researchers). To improve overall research, it is also essential to facilitate access to specific and open access digital resources. Since the need for multimedia is well established, UNILU aims to set up a television channel to support the existing university radio in order to strengthen communication with local communities. Although digital technology appears to be an opportunity to develop pedagogical student-centered learning approaches, the need to develop a quality computer network at UNILU, particularly to expand the digital campus, is urgent. Taking into account the impact of mining activities on the environment, agricultural productivity, the health of natural ecosystems and socio-ecological and economic well-being (essential for the sustainable development of the KCA), UNILU should focus on and develop these unifying sectors. Previous funding from VLIR-UOS (see section complementarity and synergy) has allowed the creation of an academic English laboratory, where the number of teachers remains very limited. Via the training of English teachers for this laboratory, the IUC programme aims to consolidate this knowledge by providing this center with robust skills in translation from French or local/foreign languages (e.g. Swahili, Lingala, Kikongo, Tshiluba; Chinese) to English, as well as in the organization of local scientific meetings in English.

2. Strategy of the institution

Briefly describe the overall institutional strategy. Highlight the institution's vision on its role as university and as a driver of change in society. Refer to other relevant internal policy documents. If no important changes took place, you may leave this section unchanged.

UNILU focuses on the tasks as assigned to it by the Congolese State, namely to: (i) train high-level of executives staff capable and creative drivers of change in all areas of science that can boost the development of the DRC, (ii) organize basic and applied scientific research directed towards specific problems in the DRC and; (iii) provide effective services to society. UNILU is working (still ongoing) with the Ministries of Environment and Higher Education on the 2020 strategy, which aims to provide both private and public employers in the green economy in the DRC with competitive young academics for an effective management of the country's many and important natural resources.

Therefore, with the ambition to develop a pole of excellence in the country and in the Katangese sub-region, UNILU aims to train PhD-qualified researchers that develop leadership to guide the country's development process. UNILU will be an actor of change by strengthening its capacities in teaching, research, governance and providing services to society. That will in turn be beneficial to the local population at several levels. Through the elaboration of its 2013-2022 strategic plan, the development paths of UNILU are selected and structured around the following axes: improvement of external collaboration, university pedagogy, strengthening libraries, strengthening laboratory equipment, increasing the number of academic staff and enhancing the administrative system. UNILU supports societies, decision-makers and (inter)national organizations in their actions on the ground. In that context, it is worth mentioning that UNILU regularly organizes awareness-raising and capacity-building workshops for the population, as well as public technical services via its "Centre de renforcement des capacités de fonctionnaires de l'Etat (CERCAF)", established at UNILU by the government. In short, UNILU is an active actor and has a clear vision of its role in terms of education, research and service to the society.

Elaborate on the capacity of the university to network with external actors: Governments, private sector, communities, civil society organisations, external funders, etc. If no important changes took place, you may leave this section unchanged.

As shown by previous projects and external funds raised, UNILU works with several partners: the government, the private sector, communities, CSOs and external donors. UNILU collaborates with private companies that are members of the Federation of DRC Enterprises (FEC), both on the training of their staff and scientific assistance in various fields, and for students' internships. Through alignment with the LMD system, UNILU faculties are collaborating with companies to define the content of UNILU training courses according to the needs in the field. UNILU collaborates with communities and CSOs through awareness/capacity building sessions, but also through partnerships. For example, communities in the rural hinterland of Lubumbashi already benefit from UNILU's scientific support on the creation of community forests. In turn, UNILU researchers also benefit from partnerships with local communities, for instance when collecting local knowledge about traditional medicine. UNILU has already been supported by ARES-CCD, VLIR-UOS, EU, World Bank, USAID... projects, making it possible to create and equip research centers and laboratories, but also to train PhD-qualified researchers. However, these projects were sectorial and not focused either on a single specific theme, nor at institutional level. Furthermore, UNILU supports international organizations, such as UNICEF, GIZ, WHO, UNFPA, World Bank, World Vision and FAO. The role of UNILU is important for data collection, through surveys and other empirical as well as fundamental research. For UNDP, UNILU supports work on the state of food security in the DRC. The International Labour Organization (ILO) has also benefited from the support of the UNILU Faculty of Economics. UNILU collaborated with the International Organization for Migration (IOM) to strengthen the capacity of the Congolese National Police. Collaboration between UNILU and Zambian companies already exists and supports the training of tourism students and faculties of Applied Sciences, through visits and internships. Locally, there are any agreements between UNILU and public or private companies like Gécamines, SNCC (National Railway Company), The Forrest Group international, Tenke Fungurume Mining (TFM), MMG Kinsevere and Chemical of Africa (CHEMAF), Congo Dongfang Mining (CDM) and others.

UNILU recycles the staff of the above-mentioned actors, contributes to the training of their future employees (students), shares with these actors innovative techniques developed by its researchers and provides consultants. Conversely, these actors participate in the elaboration of some course contents and in teaching at the UNILU; they supervise student trainees, facilitate access to study sites and share data with UNILU researchers.

3. Updated programme strategy

Long term desired change(s): Explain how the proposed IUC programme will contribute to the strategy of the institution. How does this fit with the objectives of institutional university cooperation? What are the ambition(s)/dream(s) of the proposed IUC programme? If there are no important changes compared to the earlier concept note South, you may indicate this and leave this section unchanged.

By adopting the 2013-2022 strategic plan, UNILU has committed to the following priorities: External collaboration (Axis 1), University pedagogy (Axis 2), Strengthening libraries (Axis 3), Laboratory infrastructure (Axis 4), Increasing number of academic staff (Axis 5) and enhancing the administrative system (Axis 6). It should be noted that since the resumption of university cooperation in the 2000s, UNILU has only benefited from 6 institutional projects (3 of which were supported by ARES-CCD) as opposed to nearly 100 sector/targeted projects carried out by faculties or members of its staff. This support has enabled UNILU to improve the training provided by its professors to postgraduate students, to make UNILU's communication towards local populations more effective, to improve the computer infrastructure and ensure its availability, to make libraries more accessible, to identify and disseminate administrative regulations for staff, to develop the skills of administrative staff and to train up to 102 local or joint PhD's in different fields (Agronomy, Pharmacy, Medicine, Law, etc) in a sandwich scheme. However, these almost 100 teachers-researchers were not trained in the field of mining environment issues, which is crucial in the region. The laboratories of three faculties (pharmacy, polytechnic and science) have received equipment support, but this equipment, limited in number and quality, is becoming old. In addition, the training of laboratory technicians has not been completed. Structures (for teaching, administration and research support) have been set up, but the small number of trainers does not make it possible to cope with the large number of staff to be trained. Specialized books and journals on mining, natural resources and the environment are largely lacking in local libraries, and archive management structures are non-existent. The proposed IUC programme is therefore complementary to what has been already initiated and consists of training new academic staff, setting up an Environmental Observatory, strengthening the capacities of laboratory staff and professionalizing the baccalaureate cycle at UNILU. With this approach, UNILU aims by 2032, to promote improved socio-ecological conditions of KCA populations and a better governance of KCA's natural ecosystems and biodiversity, with regard to environmental protection, as well as climate change, urbanization, health, governance, security, entrepreneurship, agro-pastoral systems and job training. This overall objective is in line with the first 5 axes of UNILU's strategic plan for 2022. The training of new expertise on mining environment issues, which will include the UNILU faculties, will make it possible to train a new generation of academics and achieve a student/teacher ratio that meets UNESCO standards (ratio of 15) and Axis 5 of UNILU's strategic plan, taking into account the gender aspect by promoting the presence of women in the academic staff). This also corresponds to Common Strategic Targets (CSTs) 1 and 9 of the DR Congo Joint Strategy Framework. However, the training of this new generation of PhD-qualified researchers requires upstream support for existing research structures and the creation of new ones when needed. This project thus will strengthen specific and recent documentation in libraries and will provide methodological and technical training for UNILU laboratory staff (Axes 1, 3 and 4). It should be noted that UNILU already collaborates with some companies in the region, ensuring long term sustainability (e.g. mining companies such as TFM collaborates with UNILU in implementing the LMD System). This collaboration deserves to be consolidated and extended to other companies for supporting the professionalization of bachelor level (Axes 2 and 5 of UNILU's strategic plan) in order to achieve CSTs 2, 4, 5 and 7.

Domains of change: What are the key challenges (cf. context/institutional analysis and strategy) the programme wants to tackle (can be both internal and external to the institution)? How to translate them into desired changes (i.e. "domains of change")? How does this contribute to the long term objective(s)? If there are no important changes compared to the earlier concept note South, you may indicate this and leave this section unchanged.

UNILU faces many challenges in carrying out its missions, both internally and externally.

Internally and as mentioned before, there is a shortage of qualified academic staff, with women being under-represented in the teaching staff, researchers and laboratory technicians in particular. In addition, libraries lack access to online specialized open access journals and technical laboratory staff are not well trained. Research sectors and structures specific to the problem of the mining environment do not yet exist at UNILU. The university press is under-equipped (radio channel with a low transmission capacity), which reduces its ability to communicate with the community. In view of these challenges, the internal/academic domains of change include:

- Strengthening of academic capacities by improving human capacities (increase of the professor/student ratio as more profs are needed for almost a similar number of students, hiring and promotion of female academic staff), material (library) and technical capacities (computer facilities, equipment and laboratory staff); and by creating three new interdisciplinary master programmes (Advanced masters in "Environmental Sciences and Technology", "Natural resource Law" and "Agro-Ecology").
- Creating new research structures, adequately equipped in material and trained staff (laboratories, centers)
- Developing interaction between UNILU and the population through outreach (university television and other media, and involving stakeholders in research and training)

As a driver of change in the KCA, UNILU does not yet have the tools to support the Congolese government (state technical services) and its partners (CSOs) in the following external domains of change:

1. Biodiversity and climate change
 - Promoting biodiversity conservation (innovative techniques for compensating biodiversity and ecosystem services losses in a mining and land use change context and promoting biodiversity return to rehabilitated sites following mining) of the KCA;
 - Assessing the extent and consequences of mining activities in addition to climate change on KCA's (agro-) ecosystems, through their dynamics, biodiversity and the potential for the delivery of ecosystem goods and services.
2. Environment and health
 - Improving depollution (ecological restoration of atmospheric, aquatic and terrestrial degraded ecosystems, with emphasis on metal contaminated soils), sanitation and urbanization efficiency;
 - Improving population health by reducing people's exposure to the toxic effects of trace metals, ensuring food safety and providing appropriate health care.
3. Governance and security
 - Improving the implementation of the Mining Code and the Mining Regulations on the ground;
 - Improving the population's knowledge about their rights, and empowering them to induce change;
 - Improving the capacity as well as the will of governing actors (government agents, local authorities, traditional authorities, security services) to apply the principles of good governance;
 - Improving the relations between mine operators (artisanal and small-scale or large-scale) and surrounding communities.
4. Entrepreneurship
 - Stimulating the emergence of entrepreneurship, particularly for women;
 - Investing in the development of strategies for the environmentally friendly treatment of raw materials;
 - Establishing a network between private/public companies and UNILU (multiple helix approach).
5. Climate smart agriculture for sustainable food systems
 - Increasing the income of the inhabitants, particularly women, through the development of other income-generating activities, such as agro-pastoral activities (alternatives to mining and rural exodus);
 - Promoting job training (functional literacy) and social reintegration of children working in mines.

The proposed areas of change will internally support the training of a new generation of scientists, the creation of an Environmental Observatory, capacity building for laboratory staff and the professionalization of the UNILU bachelor cycle by 2032 with the vision of becoming a change actor in the local community. This programme aims to strengthen UNILU's skills in various sectors in order to help it improve services to the KCA population.

Externally, through the training of new experts and knowledge transfers to CSOs and state technical services, UNILU will promote, by 2032, the improvement of the socio-ecological and economic conditions of the KCA populations in relation to environmental protection, biodiversity management, climate change, urbanization, health, governance, security, entrepreneurship, agro-pastoral systems and job training.

Programme strategy: Describe how the programme will approach these different challenges or 'domains of change'. Describe how the programme will achieve its objectives through different projects. This strategy needs to build further on the first programme strategy already developed in the Concept Note South. In addition to a narrative, including a first descriptive overview of projects, also include a visual representation of the Theory of Change at programme level.

We will carry out an in-depth inventory of the ecological and socio-economic contexts within the KCA, which will be coupled with action-research approaches with the populations living within this area. Our IUC programme is divided into three complementary components. Each of these components requires a strong interdisciplinary dimension and close collaboration between the research units and CSO/NGOs involved in the project. These axes are listed below and summarized in Figure 2:

Axis 1: Scientific research capacity building and support for research structures. This component will be carried out through the training of nearly 40 PhDs (with max 8 PhDs per academic project), as well as almost 100 master students in various fields (agro-pastoralism and job training; entrepreneurship; governance and security; biodiversity and climate change; environment and health) in order to ensure academic succession at the level of UNILU. The research carried out by the selected doctoral students will be supported by the renewal of staff and equipment within the UNILU laboratories and research centres. At the end of the first five years of the project, the new interdisciplinary academic expertise formed within UNILU will support the creation of new teaching courses, support in terms of equipment and training of technicians in existing laboratories, and the creation of an Environmental Observatory. This observatory will be composed of several research structures. On the one hand, it will merge existing laboratories and research centres specializing in environmental issues (Environmental Toxicology Laboratory in Public Health, Environmental Laboratory in Polytechnic, etc.). On the other hand, new research structures will be created and will evolve within this observatory (i.e. Centres on biodiversity management in project 1, on climate smart agriculture in project 5, on natural resources governance in project 3). The 5 academic projects will deal with scientific research, which will be supported in terms of laboratory equipment and technician training, and even doctoral school strengthening, by transversal project 6. Also, the transfer of the results of the academic projects to the beneficiaries will be supported by project 6. Ultimately, UNILU will develop skills in multi-disciplinary analysis of the ecological and socio-economic challenges of populations in a mining context.

Axis 2. Reinforcement of teaching capacities and governance through continuous training of staff (teaching and technical-administrative), documentary renewal (through the acquisition of books and subscriptions to relevant

scientific journals), improvement of capacities in the use of ICTs, and strengthening of UNILU's interaction with society, in particular through the UNILU society interface (a structure that already exists) and the university Television to be installed/created.

Axis 3: Transfer of achievements to local administrative entities and other stakeholders, in particular via NGOs well established in the KCA region (APEFE, RCN Justice et Démocratie, Groupe One, etc.), the establishment of consultation frameworks and task forces with stakeholders, as well as via the UNILU-society interface (which will be set up upstream at the end of the workshops to be organised at the launch of the programme and downstream during the extension phase). This step will be accompanied by actions to supervise and strengthen the skills of CSOs in order to better sensitize the populations living within the KCA to good practices. UNILU will also strengthen its achievements in terms of awareness raising, particularly at the level of the central administration, through the opening of a university television channel.

The three axes cut in a transversal way through the objectives/expected outcomes/impact.

Challenges and opportunities for a sustainable socio-ecology in the Katangese Copperbelt Area (KCA).

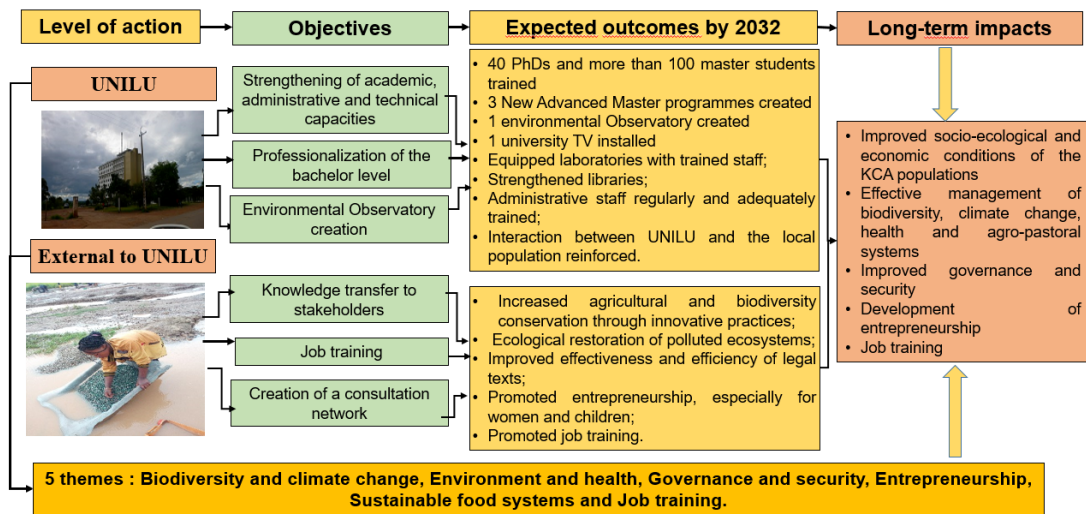


Figure 2. Visual representation of the programme strategy.

How will the programme realise organisational and institutional change? How will the programme approach this?

In addition to the technical/material strengthening of the laboratories, it is mainly in the area of research leadership and teaching innovation that UNILU will be strengthened. For a specific doctoral project presented by the candidate, the selection of PhD candidates among the assistants hired as employees at UNILU and paid monthly as civil servants of the Congolese state, followed by their retention within the academic staff after their PhD studies, will support a strong ownership of the IUC programme within UNILU. It will at the same time lead to changes at the organizational (creation of new curricula and new research structures adapted to the mining issues in the KCA, etc.) and institutional levels (improvement of the lecturer/student ratio, reduction of the use of visiting and part-time lecturers from companies, public research centres and laboratories, etc.). The development of original research by researchers trained through the IUC programme and the integration of their results into courses will make it possible to develop higher quality teaching which will in turn make UNILU more attractive for students. Moreover, this will broaden the field of research and practical work for the benefit of UNILU students, but also foreign researchers supported by the VLIR-UOS and other donors (internship, dissertations...). Finally, the quality and volume of data obtained will allow for an in-depth understanding of the socio-ecological context of the KCA. The improved accessibility of documentary resources (books and online) and laboratory/research centre equipment will also strengthen the position of the UNILU regarding private/public economic operators, notably through the recognition of these laboratories via their accreditation. Capacity building of administrative and technical staff through continuous training aimed at improving their efficiency and their operational, organizational and communication skills in particular will induce positive organizational changes. Finally, UNILU's capacity to train the population and state technical services will be improved.

Explain how the programme will create the conditions for the uptake of new knowledge, applications and services outside the Higher Education context.

In terms of networking, we will build on the previously established contacts with provincial/national public services and CSO/NGOs. The IUC programme will enable UNILU to maintain and broaden its relations with its local and (inter)national partners over the long term through involving the latter in the production of knowledge, and sharing the acquired knowledge with them. In addition, there is the UNILU-society interface, an internal structure at UNILU, whose mission is, among others, to transfer to the professional world working within KCA, the expertise, know-how

and innovations developed at UNILU in the fields of pollution control, biodiversity management, screening, diagnosis and management of diseases, natural resource governance, development of income generating activities and job training for young people. The UNILU-society-interface will also enable UNILU, through consultancy services, to support policy makers in the government or the private sector (companies, cooperatives...) and to add value to its scientific production obtained through this IUC programme.

Explain how the programme will integrate the transversal theme of **gender**? Explain how the programme will take the actual gender situation (in the institution and broader context) into account in its strategy and explain the potential impact of the programme strategy on the actual gender situation (in the institution and broader context).

The gender dimension will be taken into account in the IUC programme both at the level of human resources and of the activities implemented. On the one hand, a balance between men and women will be sought in terms of project leaders and team members, and in order to evolve in this logic, female candidates for doctoral training and master's degree courses will be encouraged. Indeed, UNILU will improve the intake of female students, for example, by building networks with secondary schools so that promising female students are directed towards higher education programmes. In our selection procedures for doctoral students, recruitment of staff will be based primarily on the quality or qualifications of the candidate (male or female). However, given equal qualifications or qualities, a woman will be chosen to ensure a better gender balance. Among the income-generating activities to be set up, market gardening and the collection of certain non-timber forest products (NTFPs; i.e. mushrooms, caterpillars...) are predominantly carried out by women, while other activities such as the manufacture of agricultural tools (axes, hoes...) are predominantly carried out by men. Regarding the sectors of income-generating activities, the fact that women have no role in decision-making (based on evidence) deserves more attention. Who decides, for example, on access to land resources? What is the bargaining power of female producers of vegetable crops and/or collectors of NTFPs in relation to potential buyers? How can other male-dominated commodity chains be opened up more to women? The question of the equal distribution of surplus value between genders within each sector will also be addressed as well as the actions to be undertaken to remedy possible inequalities. On the other hand, research in sociology, environment, agropastoralism and entrepreneurship will set up a gender analysis of the data. For the surveys, translations will use translators and interviewers of both sexes, so that the respondents do not feel limited in their possibilities of expression. Finally, women who are involved in urban planning, agricultural production and commercialization, etc., are particularly targeted by this IUC programme because they are the levers for possible changes in agricultural and urban planning practices. The UNILU-society interface will ensure, for all projects within the IUC programme, that women are well represented in the target audience for the activity. In the composition of the North project teams as well, particular attention has been paid to the representation of women. The involvement of women in the project has been going on since the beginning (in August 2019, many women were present in the working groups) and this is concretized by the presence of women as project leaders, assistant project leaders or secretaries, etc.

Explain how the programme will integrate the transversal theme of **environment**? Explain how the programme will take the actual environmental situation (in the institution and broader context) into account in its strategy and explain the potential impact of the programme strategy on the environment.

The transversal theme of environment is central in the IUC programme and constitutes the unifying element. Among the 5 academic projects proposed by the IUC programme, three deal exclusively with interdisciplinary environmental issues (Projects 1, 2 and 3). The improvement of environmental conditions within the KCA is one of the main objectives of the IUC programme. More specifically, first, in terms of the general orientation of the programme, the major challenge it aims to address is primarily related to anthropogenic pressures on natural resources and the resulting environmental degradation. Secondly, in terms of implementation, this IUC programme will develop numerous activities with a positive impact on the environment: the identification of innovative practices for restoration and pollution control, conservation of medicinal plants, preservation of pristine forests, etc. From an organizational point of view, the field missions, involving international air travel, will be carried out at strategic periods when the presence of one of the North partners is essential to progress towards the achievement of a result. Meetings limited to programme coordination will be conducted by videoconference. In the event of technical constraints for the realization of these videoconferences, the equipment available at the "Campus Numérique Francophone de Lubumbashi" and at the Faculty of Medicine will be used. The IUC programme specifically aims at informing/training the KCA populations that exploit natural resources (charcoal production, collection of medicinal plants, industrial and artisanal mining, etc.) in innovative practices that are more respectful of the environment through the support of new academic expertise transferred to provincial services and community relays. The IUC programme also focuses among others on environmental pollution accompanied by major health risks due to human exposure to trace metals. The general presentation of the local context outlines the environmental and toxicological risks in the absence of the IUC programme. The IUC programme focuses on the various actions that need to be taken to remedy the situation, highlighting the context in which they take place. The possibilities for improving the living environment of the population are based on an inventory of existing practices and the evaluation of their environmental impacts. Technical innovations (income-generating activities, job training, etc.) and ways of improving the governance of forest and mineral resources, and the organization (economic, logistical, legal) of the above-mentioned sectors will also be described.

4. Updated stakeholder analysis

In order for a programme to have impact, a thorough understanding of the key stakeholders is essential. Please update the previous stakeholder analysis and focus on stakeholders that are deemed crucial for creating effective uptake of results outside the university and the stakeholders deemed crucial to achieve genuine institutional change.

Stakeholder	Analysis	Engagement strategy
UNILU (students, teachers, laboratory and research center staff)	UNILU does not have sufficient information on the socio-economic and environmental problems posed by mining in the KCA. Teaching, research and community service capacities need to be strengthened in these domains to enable the university to further anchor its role as a key development actor. UNILU has basic infrastructure (audiences, laboratories, research centers, etc.) allowing the organization of research and teaching but those remain highly insufficient.	UNILU (researchers and students) will be involved in data collection and dissemination of results to different stakeholders. UNILU is interested in the results of the project, which will develop new skills and support the functioning of state institutions. The expertise acquired will be used to set up new courses, develop international collaborations and improve the content of teaching. UNILU laboratory and research center staff will participate in training sessions (methodological and technical) organized by the UNILU-society interface for them and will use the knowledge gained for the proper functioning of their respective laboratories.
Provincial services (provincial divisions of environment, mining, health, rural development, gender, women and children, agriculture, interior, security and traditional affairs...) and public research centers and institutions (i.e. CRAA, INERA, ICCN, FFN...)	Methodological and regulatory procedures exist for monitoring environmental degradation and mitigating their impacts on human health. However, public administration lacks both expertise and human resources sufficiently trained to meet current challenges.	Provincial services and research centers will receive practical guides and tools developed in the framework of the IUC programme. They will be involved in data collection, but especially in the training on good practices that will be organised for them. In short, they will be involved in the entire process including analysis, which ensures the sustainability of the project. It should be noted that there is already a commitment from these stakeholders.
The populations of the (peri-)urban and rural areas of the KCA (represented by civil society, farmer's organisations and women's organisations like Femmes Entrepreneurs de RDC, SAFEKA, etc.	The KCA populations are the final beneficiaries of the project. They are impacted by the dysfunction of state services and mining operators, through their economic activities, their safety, their health and their environment.	The population, especially women, is involved in the whole process, namely the collection of data by UNILU researchers and the dissemination of guides to good agricultural practices, sanitation, working in a mining environment, etc., through awareness campaigns. Awareness-raising sessions, particularly on gender and human rights issues, will be organized with the support of the UNILU-society interface to enable women to understand the problems of the mining environment within KCA.
Mining companies	Mining operators are an important economic driver in the region, through employment opportunities and the creation of basic infrastructure (electricity, health center, schools, etc.). However, mining is accompanied by enormous socio-cultural and environmental disturbances that affect health, agriculture, deforestation, urbanization. At the same time, mining operators are seeking better approaches to depollution and agricultural	The mining operators will benefit from the support of the new academic expertise of UNILU in order to encourage them to set up operating approaches in line with respect for the environment on the one hand and on the other hand they will support the professionalization of the bachelor cycle at UNILU (community driven education).

	management of the populations living on their concessions.	
(Inter)national CSOs (NGOs, banks, non-mining companies...) and higher institutes of development (e. g. Mulolwa Diocesan Higher Institute ...).	These structures often have the financial means to implement their development projects. They are generally faced with a shortage of qualified staff, which often leads them to rely on UNILU's expertise.	Given their proximity to communities, they are among the most effective channels of dissemination and communication, both in (peri-)urban and rural areas.

Synergy and/or complementarity with Belgian development actors: Highlight complementarity or synergy with the actions of other **Belgian organisations** funded by the Belgian development cooperation

Several projects with Belgian development actors (ULB Cooperation, APEFE, WBI, RCN Justice & Démocratie, Groupe One, BTC/ENABEL, PACT CONGO, etc.) show complementarity and synergy with the IUC programme. These projects were focused on the creation of an anatomy laboratory at the Faculty of Medicine, the creation of a network of market gardeners or journalists, the reintegration of children working in the mines into school, etc. The infrastructure created by the aforementioned projects will for instance be used by the IUC programme for the analysis of certain birth malformations due to the mining environment. Furthermore, the networks created (of gardeners/journalists) will be consulted to transfer the new technical tools to the population of the KCA. The ARES-CCD programme has also worked on the setting up of a few structures for training (Doctoral School), research (Research Support Unit), university administration and management (Web Office, continuing education, student reception, the UNILU-society interface, etc.), but their operation has slowed down due to a shortage of facilitators. For this reason, transversal project 6 of the IUC programme will campaign for the framework of the training of trainers.

Synergy and/or complementarity with other actors: Highlight complementarity and/or synergy with initiatives taken in the same domain by other organisations (local, regional, etc.).

There are many synergies between this IUC programme and previous projects conducted by actors such as WVI (creation of a producer-seller network), FAO (community-based management of the *Miombo* woodland), EU (acacia plantation for charcoal production and improvement of agricultural land), GIZ (analysis of the charcoal supply), USAID (resilience to food insecurity), UNICEF (the reintegration into school of children working in the mines), FEC (training programmes), African Development Bank (the renewal of a few laboratories), AUF (organization of scientific events and equipment for the organization of videoconferences and distance training), etc. Stakeholders supported by these projects will be able to benefit from the support of the IUC programme in relation to the new technical tools (i.e. food production systems, etc.) produced during the IUC programme. However, these actors will be able to draw on the new academic expertise of UNILU to run their training courses to the benefit of KCA's population. Also, environmental researchers within the IUC will be able to use the few laboratories equipped by these actors for preliminary analyses while the laboratories strengthened by the IUC programme will be able to carry out preliminary analyses in other fields or advanced analyses in the field of the environment. The AUF equipment for video conferences can be used by the IUC programme for meetings, etc. In addition, the results obtained by the IUC programme researchers will be disseminated during the scientific events financed by the AUF.

Synergy and/or complementarity with other VLIR-UOS activities: Highlight complementarity and/or synergy with other VLIR-UOS funded activities (TEAM projects, Global Minds, ICP's, etc.).

VLIR-UOS has supported several South Initiative, TEAM and JOINT projects at UNILU in the fields of health, biodiversity (conservation), urban management, agriculture and agropastoralism which can be linked to this IUC programme. The complementarity and/or synergy is highlighted more in detail in the project description of the respective IUC projects (see section 7).

Furthermore, VLIR-UOS has supported a number of transversal projects in DRC (on academic English, quality assurance and ICT). UNILU actively participates in the JOINT project on Academic English which has led to the creation of an English language laboratory. In the KCA context, the language most used for communication by the mining companies is English. Thanks to this laboratory, the academic community, especially the IUC programme researchers, will be able to improve their English language skills in order to facilitate contacts with their interlocutors, among others. In turn, this laboratory could benefit from the IUC programme's support in terms of computer materials and the training of trainers in English.

The JOINT project on "quality assurance" has led to the accreditation of certain courses organized at UNILU, the development of the course evaluation system, the course description sheet and training on the basic concepts of quality assurance. The quality assurance unit, set up thanks to VLIR-UOS funding, will support the creation of new courses as part of this IUC programme. The results obtained by the qualified researchers trained under the IUC programme will be integrated into some of the courses organised at UNILU. Thanks to this IUC programme, quality assurance units will be created at faculty level. Ultimately, the quality assurance unit will also

be a strategic structure for monitoring the success indicators of the IUC programme; it will thus form the backbone of the project monitoring.

The ICT project UNIVERSITIC aimed at supporting UNILU in its efforts to computerize and open up to the world thanks to new technologies. The new courses to be created in the IUC programme will be based on the computer resources available for putting courses online. Indeed, the closure of Congolese universities during the Covid-19 pandemic period has shown the need to implement e-learning for the benefit of students. The IUC programme can support the decentralisation of UNILU's IT service at faculty level.

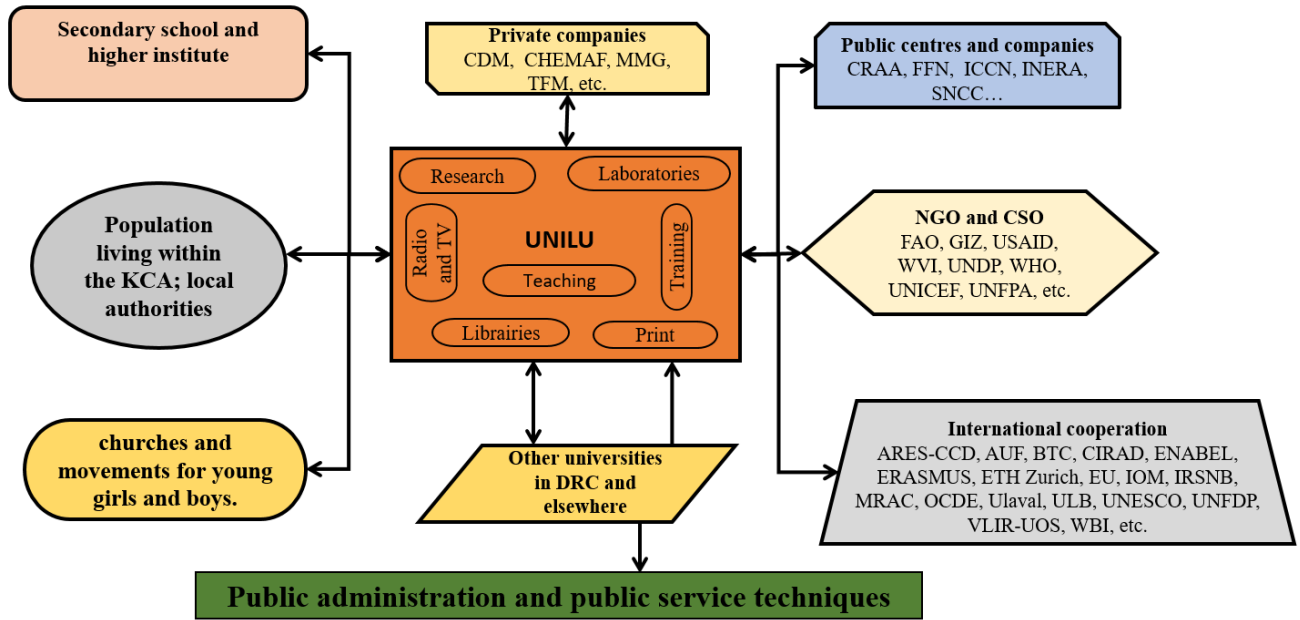


Figure 3. Overview of the synergy and complementarity of the proposed IUC programme with other stakeholders.

5. Risk analysis

Risks + potential impact	Probability (1-4)	Potential impact (1-5)	Response
Non-compliance with collaboration agreements	1	4	To sign the partnership agreement. Possible renegotiation of points of disagreement, reminder of commitments, recourse to the competent authorities.
Doctoral students do not have the social opportunity to devote themselves fully to their research throughout the project, which does not allow them to hand in their work in the allotted time.	2	3	Selection of UNILU assistants, who, moreover, are paid monthly by the Congolese State and UNILU rather than non-salaried persons who might be tempted to give up their jobs in favour of paid employment. Paying the local grant.
Non-collaboration of local actors (NGOs and other CSOs).	2	4	Establishment of a monitoring committee bringing together the project's stakeholders (including doctoral students). Consultation with local leaders. Use of local relays (NGOs) and the provincial rural development division. Organization of (new) awareness raising sessions for key persons. Listening to their concerns and jointly finding solutions.
Non-collaboration of the authorities (State and traditional) and non-adherence of these authorities to the objectives of the IUC programme	1	4	Invite the traditional authorities in the event of a dispute within the monitoring committee. Inform regularly on the progress of the project.
Internal competition within the communities in which the programme operates	2	3	Consult with village representatives to identify, in an inclusive approach, the diversity of beneficiaries, their expectations, fears and potential contributions. Invite other village representatives to the monitoring committee in case of dispute.
Conflicts between state technical services and IUC programme implementers	1	3	Regular information and consultation meetings with the local administration. Use of local representatives from provincial divisions to share information on the project's progress. Use of the consultation framework if necessary.
Disagreement between the different administrations in the interpretation of the rules and regulations.	2	2	Consultation between the different levels of power. Information and sensitization on the texts of laws relating to the management of forest ecosystems, the mining sector, agriculture, etc..
Political instability	1	3	No preventive action is possible, other than to follow the instructions of the Ministry of Foreign Affairs.
The low availability of land can limit the success of actions to set up experimental sites and the appropriation of results.	1	3	Agreements will be signed between the various parties involved in the project and the provincial and traditional authorities to guarantee the availability of experimental and demonstration sites. The collaboration of the provincial division of rural development will help to clarify the cadastral situations and guarantee the availability of sites. In addition, the involvement of resource persons from the pilot villages will be useful for the prevention/resolution of potential conflicts.
The roles and responsibilities of the programme partners are not clearly defined in terms of carrying out, evaluating or reporting on activities	1	3	A pyramidal organization has been set up and an organizational chart has been drawn up identifying various decision-making, strategic guidance, coordination and implementation bodies. Each activity is under the responsibility of a main partner, which will be monitored by the local steering committee, itself monitored by the management unit (see project 7). In addition, a start-up seminar will be organised in order to distribute all responsibilities among the different project partners.
Final beneficiaries do not benefit from innovation training.	2	3	Integrate local resource persons in the implementation of IUC programme activities, as well as in awareness-raising activities.

The study areas are not representative of the study area of this IUC programme.	1	3	The programming of activities must ensure that the study areas are extended by involving the traditional and political-administrative authorities of the entire KCA
The habit of traditional practices is not overcome and people do not accept new techniques.	2	3	Initiate awareness-raising sessions involving the heads of sites.
The political authorities and other actors (mining operators, farmers) do not integrate the solutions proposed by the IUC programme.	2	2	Inform them regularly about the progress of the IUC programme (and its projects) and have them involved in the implementation of the IUC programme.
Refusal of populations to participate in investigations on grounds of security concerns	1	2	Get the people in charge of the administration of these areas to contribute by making them responsible for certain activities within the programme.
Power cuts and load shedding	2	2	Making use of alternative energy sources.
The presence of areas at risk of armed conflict	3	2	To circumscribe these areas and not to include them in the IUC programme
Stakeholders do not collaborate in providing the data needed for the studies and their implementation.	1	3	Establishment of the Operational Monitoring Committee. The monitoring committee and the NGOs organise consultation meetings to motivate the actors concerned..
The populations are not motivated to participate in the trainings organized by the program. Moreover, they do not wish to put them into practice because of the poverty of the population who live by their daily resourcefulness.	1	2	Provide transportation for participants. We will motivate them to put the lessons learned during training into practice by regular monitoring activities which will be done by community relays, local authorities, agents of public services, etc.
UNILU staff supporting the IUC programme do not have sufficient skills to work on some of the activities proposed.	2	3	Training of staff.
Restrictions on mobility following a catastrophe or pandemic / epidemic	2	4	Follow the instructions of the Ministry of Health or the Ministry of Human Affairs. Think of alternatives (online seminars, webinars, online meetings, blended teaching, etc.) and creative solutions to ensure the successful implementation of the IUC programme. Rely on expertise in blended learning and online management
Difficulties related to the poor quality of transport during field trips	2	3	Make available to the IUC programme the means to ensure transport.
Difficulties of new equipment acquired due to lack of training in handling by technicians	2	4	UNILU staff are already or are about to be hired at the university. North referents will be available and reachable to give the trainings (also at a distance). Training of technicians on site is preferred. However, if onsite training is difficult (due to mobility problems), alternative methods will be used such as online training, making and using videos explaining the training...Writing Standard Operating Procedures (SOP) will favor the training of technicians, the standardization of the training and the standard use of equipment
Communication with interruptions due to poor quality of satellite internet connection	2	3	Having mobile internet for the person in charge of the IUC programme, projects and activities.
Language Barriers in Community Outreach	2	3	Involving people who speak the language of each region.
Risks of land conflicts between local populations and mining companies in mining concessions within KCA	1	3	Inform regularly on the progress of the project and involve the mining companies in the implementation of the IUC programme as some activities will take place on their sites.

6. Institutional embeddedness

Link with university management: explain how the programme will assure a continuous link with and involvement of the university management.

UNILU is managed according to the priorities set out in its Strategic Plan 2013-2022. This IUC programme responds to most of the concerns raised by this strategic plan. Trained researchers are graduates of UNILU and already employed by UNILU; they will join the academic staff and pursue research leadership beyond the duration of the IUC programme. This research will build on the laboratories strengthened during the IUC programme. The training of academic and technical-administrative staff will be gradually passed on to new generations through capacity building trainings organised internally, using the "home grown" model.

UNILU has the academic sector as one of its priorities. The student-teacher ratio will be reduced through the training of trainers in the fields of environment, biodiversity management, health, governance and security, entrepreneurship, agro-pastoralism and job training. In addition, the organization of the UNILU-society interface will allow better interaction with the professional sector in the KCA, with two positive results: the involvement of professionals in the design / animation of courses on the one hand and in the supervision of students in companies on the other hand. This will make it possible to further professionalize the training organized at the undergraduate level. In its process of linking to the Bologna system (LMD), the support in documentary resources will enable UNILU to better organize the personal work of students who require more specialized documents and a subscription to online journals. In-service training for teachers, administrators and technicians will help UNILU to improve its teaching and research services.

Flemish support: explain the programme's vision/approach on creating broad Flemish support (inter-institutional cooperation) at the level of the Flemish universities and university colleges.

UNILU has already developed programmes with several Flemish universities. This IUC programme aims to strengthen this link. The Flemish universities involved in this IUC programme will develop new and original research in collaboration with UNILU, leading to high quality publications, which will contribute to the visibility of the partner universities. At the same time, this IUC programme presents an opportunity for researchers and students from Flemish universities to take advantage of a local embeddedness to undertake solid research activities, both doctoral research and students' master dissertations. Finally, the region's mining operators have a greater need for qualified expertise in specific fields. Therefore, when UNILU is called upon to do so, it will absolutely call upon the expertise of the Flemish universities to join forces in order to offer the services requested by the region's companies. Their laboratories will also be called upon for certain specialised analyses, especially if they are accredited.

Positioning of Programme Support Unit (PSU): explain how (where in the organisation) the PSU will be organised and any particular focus areas / accents regarding the PSU the programme wants to realise.

An IUC Programme Support Unit (PSU) is essential to coordinate the entire IUC programme to ensure sound administrative and financial management of the programme. This management unit for the entire IUC Programme has the advantage of being led by the Local Coordinator who, in addition, is the Cooperation Adviser at UNILU. UNILU, which is still looking for a management unit for its international projects, will take advantage of this opportunity to integrate the PSU as a management unit for its future international projects managed by the UNILU Cooperation Department.

The PSU is composed of César Nkuku (local coordinator), Yannick Useni (programme manager), Virginie Bito (Flemish coordinator) and Liesbeth Oeyen (ICOS). The PSU will establish and enforce administrative and financial procedures to ensure the timely achievement of the results assigned to the IUC programme through regular monitoring of the activities of all projects. Furthermore, the PSU will ensure scientific, administrative and financial follow-up and reporting and makes clear and relevant arrangements for the smooth running of all projects that make up the IUC programme, e.g. through the regular organization of meetings between project leaders and local actors, review of the budget every 2 months and establishment of guidelines/establishment of priorities per project. The PSU meets once every two months at the local level and 3 times a year with the Flemish coordination. Regular exchanges (at least every month) take place with the local project leaders in person, via email, WhatsApp and Skype/Google Hangouts.

The PSU also supports the Local Steering Committee (LSC), the Flemish Steering Committee (FSC) and the Joint Steering Committee (JSC), the strategic decision-making bodies for the IUC programme. The LSC and FSC are responsible for the overall implementation of the IUC programme and ensure that the expectations and project objectives are met, that deadlines are respected and that the programme is run smoothly and efficiently. The LSC and FSC meet at least twice a year in addition to regular contacts between North and South respondents. Once or twice a year, the LSC and the FSC meet within the framework of the JSC. The JSC consists of the different North and South project leaders as well as the scientific and administrative South project partners (representatives of promoters and doctoral students, research support structures, state technical services, CSO partners). The JSC is chaired by the South coordinator. It sets the scientific orientations, it will organise the recruitment of doctoral students at the beginning of 2022 on the basis of a competitive examination (after a call for proposals is prepared by the LSC and disseminated on the UNILU website and in the faculties), paying attention to gender (with equal competences, women will be favoured), regularly evaluates the progress

of the activities and gives an opinion on the annual programming of research activities. Its main role is to ensure better monitoring of doctoral research activities, to support scientific publications, to organize training and to communicate the IUC programme results.

Regardless of the structure concerned, all meetings organised under this IUC programme, whether face-to-face or virtual, must be recorded in minutes which include, inter alia, the place, date and duration of the meeting, the agenda, the participants and the resolutions taken. The minutes of each meeting must be distributed to the appropriate recipients and a copy archived by the structure concerned. The North Coordination will support the Local Coordination in the choice of research activities, publications, training, communication, project management, activity reports, etc.

UNILU's management committee will be represented in the programme support unit and local steering committee of the IUC programme. As a result, the Rector of UNILU will monitor the process and progress of project implementation. He will be aware of any difficulties and obstacles encountered. The IUC programme will always have recourse in the last instance to the Rector. It should be noted that the partnership agreement will be endorsed and signed by the Rector

7. Project identification

Add a sub-chapter (like 7.2.) for every project² that you have identified. Max. 1,5 / 2 pages per project.

² 2 types of projects: academic theme-based projects or Transversal Institutional Strengthening Projects (TISP)

7.1. Project 1: Biodiversity and climate change

Objectives: State the objectives of the project. What do you want to realise through the project (medium-term (5 year) objectives). To what long term objectives will the project contribute (can be both internal and external to the university)

The *Miombo* ecoregion sustains the livelihoods of more than 100 million rural poor people and 50 million urban people. Hence, understanding and conservation of *Miombo* woodlands is paramount. However, balancing ecosystem services (ES) such as food security and nutrition, wood energy, and poverty alleviation against *Miombo* conservation for biodiversity, water resources, buffer against extreme weather events and land degradation is challenging in a context of population increase in the *Miombo* ecoregion (Gumbo et al., 2018, FAO). This important challenge comes against a backdrop of very low research intensity; i.e. with attainable research spending below 1% of the agricultural GDP (EU and AU targets; Nin Pratt, 2016, IFPRI). In general, this project aims to establish research priorities and strengthen research leadership of UNILU with respect to the sustainable conservation of *Miombo* woodlands to sustain societal well-being. Specifically, it seeks (i) to quantify the impact of environmental changes (i.e. climate change, land use change, pollution...) on *Miombo* ES; and (ii) to develop local contextualized and science-based solutions for biodiversity conservation, particularly in mining and charcoal production areas. Therefore, the medium-term internal objectives are: (i) to build a critical academic mass and research infrastructure, (ii) to investigate and develop interdisciplinary solutions for *Miombo* woodland conservation, and (iii) to set up a Competence Centre for Rational and Sustainable Management of Biodiversity Resources (CRSMB), which will evolve as a part of the Environmental Observatory (to be created thanks to this programme, through project 6). The medium-term external objective is to develop locally-driven interdisciplinary research agendas to attract additional international public and private funding. In the long term, this project aims (i) internally, to make UNILU a regional reference institute for *Miombo* woodland ecosystems services and biodiversity conservation; and (ii) at the external level, to contribute to well-being of the KCA population by developing decision support tools for the sustainable management of forest ecosystems and by proposing decision support systems for mitigating impacts of environmental change on forest ecosystem services.

Explain the link with the context analysis, the programme objectives and the other projects. Detail the context analysis if needed (e.g. the specific theme, specific challenges of the departments involved, the local/sectoral context, etc.).

In addition to hosting the world's largest copper and cobalt deposits, the KCA also contains much of the African *Miombo* woodland. The *Miombo* woodland, which is a tropical dry deciduous forest, represents more than 20% of the forests of DRC and has an estimated diversity of 8,500 plant species (4630 of which are endemic) and about 5,000 animal species. Being an important hotspot of plant and animal biodiversity, the *Miombo* woodland provides several goods and services (timber, charcoal, honey, mushrooms, fruits, climate regulation, clean water...) that contribute (in)directly to survival and well-being of local populations. The most recent anthropogenic pressure (mining boom, urbanization, artisanal charcoal production and slash-and-burn agriculture) has led to profound environmental and landscape changes such as soil and water pollution, land degradation and deforestation leading to a loss of biodiversity and other ES. Furthermore, countless harm from the destruction of *Miombo* woodland can be observed. For example, many non-timber resources, harvest products such as honey, mushrooms, but also caterpillars are gradually disappearing due to selective cutting of host plants, etc., thus threatening these value chains. Similarly, the deterioration of *Miombo* woodland also leads to a significant reduction in game fauna, and a progressive deficiency in animal proteins that the village population derives from hunting (game) and gathering (caterpillars) products, in a context of poorly developed livestock farming. The present project aims at reversing the above-mentioned negative trends, through the adequate training of new research leadership in the region, the creation of a CRSMB and an Ecosystem Services Database (ESDB) within the Environmental Observatory and the capacity building of laboratory staff. This will improve the socio-ecological framework of the KCA population with regard to biodiversity conservation and restoration and climate change. In addition, Project 1 is linked to the other academic and cross-cutting projects developed within the IUC programme. Firstly, through the implementation of a contextualized solution for *Miombo* Woodland conservation, the livelihoods of the local population of the KCA will improve (Project 2). The study of land use pressures on *Miombo* woodland and the proposal of appropriate models for mitigating their environmental impacts will link with Project 5. Subsequently, better knowledge of *Miombo* woodland's biodiversity and ecosystem services offered will develop other fields of activity, such as honey and mushroom production, collection of medicinal plants, etc., which will promote entrepreneurship through the creation of new value chains (Project 4). Women, who are especially involved in mineral washing in artisanal mining sites and therefore exposed to toxic metals, are targeted here. Finally, within the KCA, populations compete for the same resources in a restricted environment whereby conflict leading to insecurity become problematic (Project 3). University radio will be used to disseminate the results of this project, while the partnership between UNILU and the actors working in the management and use of ES will be improved by using the UNILU-society interface (project 6). Project 6 will strengthen the research capacities of the promoters involved in the supervision of the doctoral research of project 1, as well as the equipment and training of laboratory technicians or the implementation of the CRSMB within the environment observatory.

Describe the strategy of the project: how will it reach its objective(s)?

This project will be based on a triple, strategic approach:

Axis 1. Academic Component. This component aims at strengthening the pedagogical and knowledge base of the teaching staff and strengthening research leadership, based on doctoral and master theses in co-supervision with the Flemish partners. As a result, 6-8 doctoral students (at least 1/3 will be female, since more than 75% of UNILU's scientific staff is male) will be selected in consultation with all partners. They will carry out doctoral training, which will involve locally driven interdisciplinary research, science communication, elective courses and attending international conferences. In addition, 5 master students (in agronomy, veterinary medicine, and sciences) will be selected per academic year according to their research project to be carried out within the framework of this project. Project 2 will promote the creation of a Master (for both research and professional purposes) in "Environmental Science and Technology" where the doctors trained in project 1 will carry out research and teaching on biodiversity and ecosystem services. Intermediate results (**IR1**): the advanced Master in "Environmental Sciences and Technology" is created, advocated and supported, and at least 6 PhD students and 50 MSc students graduated during the 10 years of the programme.

Axis 2. Research component. This component will focus on (i) the development of a methodological framework for ES (description of indicators, mechanisms and determinants of ES; (ii) mapping and assessing the (in)direct consequences of land use/cover pressure issue (mining, charcoal production shifting agriculture...) and climate change on ES and human well-being (including gender impact), and (iii) the development of approaches to mitigate the environmental impacts (direct and indirect) on biodiversity. The results will be vulgarized in the form of policy briefs. **IR2:** The skills of UNILU teachers-researchers in assessing the environmental impacts on ES are strengthened and transferred to their students.

Axis 3. Service to society. The project will promote training, knowledge transfer and support for actors in the field of *Miombo* woodland ecosystem services through the establishment of a task force including stakeholders (local communities, state structures, companies and NGOs, research institutions, civil society, etc.) which will constitute a framework for information exchange and sharing, particularly through the production of decision support tools (technical and methodological documents, etc.) adapted to the context of the KCA and the creation of the CRSMB within the Environmental Observatory. Continuous training programs adapted and evolving for the benefit of professionals, with concrete impacts on the socio-ecological development of the region, will also be organized. **IR3:** The results obtained will be disseminated to all local and regional stakeholders.

Analysis of end-users / final beneficiaries: identify the end-users of the project results and describe the uptake strategy of the project (incl. structural barriers for end-users).

Among the beneficiaries of this project are (1) UNILU's academic staff and students who are conducting their studies at UNILU; more specifically, local PhD supervisors and the doctoral and master students that will be recruited and supported by the project to carry out their research. In the long term, it is not only the entire institution that is targeted by the project thanks to future academics generation, but also (2) the communities living around the sites with high land use and population pressure (mining activities, charcoal production, shifting cultivation...) that deserve a better understanding of the threats posed to their living environment; (3) industrial companies (mining, agriculture, etc.) who will benefit from innovative conservation techniques, and from the ESDB to better manage the ecosystems within their concessions; (4) governments (central and provincial) who, while promoting local development, must address the challenges (ecosystem and climate change, loss of biodiversity and assets, and ES) related to land use and population pressure and (5) NGOs and CSOs who will further develop their databases to raise awareness of good practices that conserve biodiversity and KCA ecosystems in general. End-users may face the following structural challenges and obstacles: (1) weak organizational capacity of state services involved in environmental management, (2) low level of collaboration between industrial companies, state services, and civil society environmental actors, (3) low level of knowledge and lack of motivation of external stakeholders, and (4) reluctance of industrial operators (mainly miners) and state services to share necessary data and ensure continued accessibility to degraded sites located in mining concessions. UNILU will meet these challenges thanks to its knowledge and understanding of the local context, its long-term collaboration with beneficiaries and end-users, as well as the sensitization of local actors to the existing problems and especially to the possible solutions developed in the framework of this project. UNILU will interact continuously with the final beneficiaries (through the advisory board, the task forces, consultation frameworks, etc.) during the implementation of the project and will ensure that they receive the necessary training on how to apply the new technologies (i.e. ecological restoration of degraded ecosystems, biodiversity conservation, etc.) developed. A community of stakeholders will be created through a platform or a framework for exchanges that will be regularly in activity and whose aim is to share information. In addition, meetings with all stakeholders (UNILU, enterprises, women's associations, youth, FEC, state services) will be organised, on a rotating basis in the KCA agglomerations, every 6 months in order to evaluate and reframe the different activities to be carried out within this project. Also, the mass media will be solicited to popularise the project activities to the entire KCA population. The external partners (e.g. NGOs) will be supported through training so that they can effectively communicate and disseminate the data produced by the project. Finally, UNILU will ensure that the ESDB is shared with beneficiaries and end-users.

Presentation of the project team: present the project team, the available expertise and the expertise sought for.

Proposed local project leader	Leader: Basile Mujinya Bazirake; Assistant: Jean-Pierre Kabulu Djibu; Secretary : Solange Kabongo Kalala.
Local project team (<i>Other involved staff: professors, assistants, (administrative) collaborators, etc.,</i>). Also mention involved departments /faculties/ universities.	<u>Were involved in the drafting:</u> Faculty of Agronomy: Basile Mujinya Bazirake, Emery Kasongo Lenge, Yannick Useni Sikuzani, Jonathan Ilunga Muledi, Sylvestre Cabala Kaleba; Faculty of Sciences: Jean-Pierre Kabulu Djibu, Donatien Kalombo Kamutanda; Faculty of Veterinary Medicine: Didier Tshikung
Overview of available domains of expertise in the project team	Functional ecology of woodlands, Management of vegetation ecosystems, Landscape ecology, Forest biogeochemistry, Environmental (eco-) bio-pedology, Pedogenesis, Remote sensing and geographic information systems, Land evaluation and agrometeorology, Plant and wildlife population dynamics, Climate change, Evaluation of ES, Soil conservation and erosion control.
Comments on the expertise sought for at level of the Flemish HEIs	Forest biogeochemistry, Carbon sequestration, Climate change, Agrometeorology and land evaluation, Forest ecosystem functioning, Soil conservation, Assessment of ES, Biodiversity conservation, Stable isotope analyses, Landscape ecology, Modelling the anthropisation of systems and landscapes, Spatial ecology, Peri-urbanisation, Remote sensing and mapping, Deforestation, Forest fragmentation.

7.2. Project 2 : Environment and health

Objectives: State the objectives of the project. What do you want to realize through the project (medium-term (5 year) objectives). To what long term objectives will the project contribute (can be both internal and external to the university)

This project aims to propose strategies to clean up ecosystems impacted by mining activities and to improve the environmental quality and health of the KCA's population. The specific objectives of the project are (i) to improve assessment of pollution and remediation of aquatic and terrestrial ecosystems, air quality and urbanization; and (ii) to improve population health by reducing and preventing exposure to the toxic effects of trace metals, and to provide appropriate health care. In the medium term the project aims to (i) strengthen UNILU and the provinces of Upper-Katanga and Lualaba in human and material capacities to understand the problems of ecosystem pollution, health and urbanization resulting from mining activities and to propose appropriate solutions; and (ii) propose appropriate strategies for the remediation of polluted areas, the management of health issues and the spatial planning of urbanized areas in the KCA. In the long term, this project aims to (i) make UNILU a regional reference institution on strategies to improve the quality of the environment; (ii) remediate ecosystems polluted by mining activities in order to reduce human, plant and animal exposure and improve their contribution to the well-being of the population; and (iii) provide the population of the KCA with appropriate care for health problems related to environmental disturbances mainly caused by mining activities and unplanned urbanization associated with strong demographic pressure.

Explain the link with the context analysis, the programme objectives and the other projects. Detail the context analysis if needed (e.g. the specific theme, specific challenges of the departments involved, the local/sectoral context, etc.).

This project takes place in the context of the environmental degradation of the KCA and the contribution of its ecosystems to improving the quality of life of the people. The KCA's populations are facing serious public health problems as a result of exposure to pollutants and irradiation related to mining in a context of strong demographic pressure in the agglomerations created anarchically around the main mining sites. This project is part of a general search for sustainable solutions initiated during projects undertaken in recent years by addressing the remediation of wetlands, for which strategies have not yet been developed, and by promoting strategies already available for non-flooded soils. In addition, this project aims to address major public health issues related to mining activities and spontaneous urbanization around major mining sites and to propose appropriate solutions such as detection and diagnosis capacity building or production of an urbanization guide in mining environments. It has been demonstrated through several VLIR-UOS projects conducted at UNILU that human exposure to trace metals in the KCA has disastrous consequences for human health (heart failure, peripatum cardiomyopathy, hypertension, erectile dysfunction, premature births, abortions, infertility, high maternal and infant mortality etc. as reported by Malamba et al., 2018; Mukendi et al., 2018; Musa et al., 2019; Van Brusselen et al., 2020). Furthermore, in the context of Covid-19, Tanwar et al. (2020) demonstrated air pollution to be an important co-factor for increased myocardial damage and thus increased complications and mortality of infected patients. The absence of sustainable urban development plans exacerbates this problem. This accentuates the complexity of health problems and increases the frequency of natural disasters, including floods and erosion. Although KCA's cities sometimes offer many opportunities, such as access to health care, drinking water, electricity and education, anarchic urbanisation continues to occur spontaneously due to the weakening of the power of the public authority. Around mining sites (artisanal as well as industrial), makeshift settlements develop. Spontaneous urbanization thus contributes to increasing health risks (prostitution, alcoholism, drug addiction, etc.). The most obvious health problems are linked to drinking water scarcity, environmental degradation, violence and trauma, non-communicable (cardiovascular diseases, cancer, diabetes and chronic respiratory diseases) and communicable diseases (HIV, hepatitis, measles, etc) and poor diet, etc. The above-mentioned problems particularly affect women and children, particularly at the ASM sites. Project 2 therefore aims to provide adequate training of teachers-researchers and professionals, especially in the field of depollution of ecosystems impacted by mining activities, health, sanitation and sustainable urbanization. The project also aims to support the operationalization of an Environmental Observatory within project 6, capacity building of laboratory technicians, and the training of new academic expertise in order to participate in the creation and improvement, by 2032, of the socio-ecological framework through quality environment, sustainable urbanization and sanitary conditions. From the above, it is clear that all activities envisaged in the framework of this IUC programme (and all projects proposed) cannot be adequately carried out without real consideration of environmental and health issues. Indeed, the depollution of ecosystems impacted by mining activities: (i) will contribute to the conservation of biodiversity and its services to people as well as to resilience to the effects of climate change (Project 1), (ii) will promote entrepreneurship by offering opportunities for the creation of new value chains (Project 4) as well as the development of market gardening and animal husbandry (Project 5) in previously unsuitable areas, and finally (iii) will contribute, through better knowledge of depolluted ecosystems, to the development of governance principles adapted to their context (Project 3). University radio and television will be used to disseminate the results of this project, while the UNILU-Society interface will be used to strengthen the partnership between UNILU and the various stakeholders working in the field of the environment, urbanization, sanitation and health (Project 6).

Describe the strategy of the project: how will it reach its objective(s)?

The strategy of the present project is based on 3 Axes:

Axis 1. Scientific Research Capacity Building. Capacity building of scientific staff through doctoral research (6 to 8 PhD theses) in the field of environment, health, as well as sanitation and urbanization issues, and the strengthening of the capacities of the appropriate laboratories (in equipment, infrastructure and technical staff, etc.). Research will focus on the following domains: (i) assessment of ecosystem pollution and remediation techniques; (ii) reinforcement of epidemiological surveillance of health problems in the KCA and the valorisation of local knowledge in traditional medicine, (iii) evaluation of the impact of uncontrolled urbanization on the environment and health within KCA. **IR1:** The competences of UNILU teacher-researchers on the assessment of pollution and remediation strategies of polluted ecosystems, epidemiological monitoring, the valorisation of local knowledge in traditional medicine, and sustainable spatial planning of urbanised areas in a mining context are reinforced and transferred to UNILU students and at least 6 PhD students are trained.

Axis 2. Training. A multidisciplinary (Agronomy, Pharmacy, Sciences, Polytechnic, Public Health, Medicine, Architecture, etc.) and advanced Master in “Environmental Sciences and Technology” will be developed at UNILU. This advanced Master aims to train specialists / actors capable of understanding the issue of the mining environment through a multidisciplinary and multiscale approach. In addition, it will be the interface of several sciences, all the more so as it will address technical, health, economic, etc. issues related to the mining environment. The need to create it stems from the fact that there is no study programme in the mining environment, either in the DRC or in the sub-region (Central, Eastern or Southern Africa). UNILU, through this advanced Master, has the ambition to become a centre of excellence for training in the mining environment in the sub-region. In addition, continuous training on environmental, health and urban planning themes related to mining activity within the KCA will be regularly organized. These will be particularly addressed to the agents of state technical services (health, environment...), health professionals, NGOs, mining companies and the traditional / political-administrative authorities. The balanced gender representation will be encouraged, both with regard to the persons to be trained and the trainers. **IR2:** The continuing education programme and the Multidisciplinary and Specialized Master in Environmental Science and Technology are organised.

Axis 3. Services to Society. A task force will be set up, bringing together representatives of all stakeholders, to provide a forum for exchanges on pollution and remediation issues, health issues and land use planning. Dissemination of the project's results will take place through university radio and television, scientific publications, practical guides and participation in symposia, congresses, workshops, etc. Dissemination of the results adapted to non-scientific groups, especially the local communities of the KCA will be designed preferably in local languages and/or with pictograms to reach a large number of inhabitants. **IR3:** The results obtained are disseminated to all local actors.

Analysis of end-users / final beneficiaries: identify the end-users of the project results and describe the uptake strategy of the project (incl. structural barriers for end-users).

The final beneficiaries of the project are: (i) UNILU students who will benefit from quality training of their teachers on the interconnection between environment, health and urbanization; (ii) State technical services and NGOs who will have a better understanding of the epidemiological situation of health problems related to mining and better databases on polluted ecosystems, with a view to developing effective strategies, based on the local context, for the remediation of sites made non-viable by mining activities, (iii) mining companies and miners' associations will have information on effective strategies (based on knowledge of the causes of the problems observed) for the remediation of sites made non-viable by their activities; (iv) the people of the KCA who will have access to the ecosystem services of the remediated sites (especially women engaged in market gardening), to better organized and context-appropriate health care to meet their vital needs. End-users may face structural challenges and obstacles: low involvement of traditional and politico-administrative authorities, low level of collaboration between stakeholders (i.e. no sharing of available data), language barrier, lack of receptivity of populations to the strategies developed by the project, low level of vulgarisation. UNILU, with its deep knowledge and understanding of the local context and its long-term collaboration with beneficiaries and end-users, will take up these challenges. Thus, thanks to the various partnerships with traditional and political authorities, UNILU researchers will have easy access to the study sites. In addition, these authorities, in collaboration with the community relays, will be involved in the implementation of the strategies developed in the project. Finally, the Task Force, which will provide a forum for exchanges between stakeholders, will help overcome the above challenges and obstacles through frequent consultations and better communication and knowledge of needs and alternatives between stakeholders.

Presentation of the project team: present the project team, the available expertise and the expertise sought for.

Proposed local project leader	Leader: Salvius Bakari Amuri; Assistant: Fanny Malonga Kaj. Secretary: Mme Peguy Biyini Minzimi.
Local project team (<i>Other involved staff: professors, assistants, (administrative) collaborators, etc.,. Also mention involved departments /faculties /universities.</i>)	<u>Were involved in the drafting:</u> Faculty of Pharmaceutical Sciences: Salvius Bakari Amuri; Faculty of Agronomic Sciences: Mylor Ngoy Shutcha, Auguste Chocha Manda; Faculty of Medicine & School of Public Health: Célestin Banza Lubaba, Abdon Mukalay, Albert Mwembo Tambwe, Fanny Malonga Kaj, Didier Lez Malamba; Faculty of Sciences: Matthieu Kayembe wa Kayembe; Centre de Compétences en Planification et Gestion Urbaine: Bonaventure Banza Wa Banza, Perry Balloy Mwanza; Polytechnic Faculty: Léon Zeka Mujinga, Jean-Marie Kanda; Faculty of Veterinary Medicine: Arthur Ngulu Nsasi; Faculty of Arts and Human Sciences: César Nkuku Khonde.
Overview of available domains of expertise in the project team	Assessment and remediation of polluted sites; Environmental health and toxicology; Ethnopharmacology and pharmacognosy; Therapeutic chemistry; Drug quality assurance and control; Urban and spatial planning; Gynecology and obstetrics; Public health and clinical epidemiology; Maternal and child health; Cardiology; Virology; Wetland management and exploitation; Neurology and psychiatry.
Comments on the expertise sought for at level of the Flemish HEIs	Pollution assessment and remediation of polluted sites; Ecological restoration; Environmental and clinical toxicology; (Non)infectious diseases; Hepato-gastro-enterology; Congenital malformations; Cardiology; Bacteriology and virology; Tropical diseases; Architecture, town and country planning; Phytochemistry; Drug analysis; Clinical biology; Natural products studies; Political ecology; Mining waste management and reclamation; Biodiversity and wetland conservation; Health systems and community involvement.

7.3. Project 3: Governance and security

Objectives: State the objectives of the project. What do you want to realise through the project (medium-term (5 year) objectives). To what long term objectives will the project contribute (can be both internal and external to the university)

By reinforcing UNILU's research, teaching and outreach capacities, this project aims to address the governance and security challenges surrounding natural resources exploitation in the KCA. In the medium term, the project has the following specific objectives: (1) to strengthen UNILU's capacity in the production of new knowledge on governance and security issues around natural resources exploitation, including mining; (2) to promote collaboration among researchers from various scientific backgrounds, thereby consolidating interdisciplinary and mixed-methods research; and (3) to foster the co-creation of knowledge with non-academic stakeholders, thereby promoting synergies between academia, the community, the public and private sectors. In the long term, the project will enable the establishment of an interdisciplinary research unit (Human and social science), a support structure for the Environmental Observatory (project 6), with competent academic, scientific, administrative and technical staff. Research and training within this unit will focus on governance of natural resources and security issues, with particular attention for the promotion and protection of gender equality (contributing to a better understanding, consideration and visibility of women in the governance of natural resources), and for economic and social human rights. This research unit will also serve as a framework for future doctoral research related to the theme and the strengthening of academic and professional capacities. It is in the same vein that the project intends to create an advanced master in Natural Resources Law.

Explain the link with the context analysis, the programme objectives and the other projects. Detail the context analysis if needed (e.g. the specific theme, specific challenges of the departments involved, the local/sectoral context, etc.).

As explained in the context analysis, the development impact of the intensive exploitation of natural - and particularly mineral - resources has been limited. Even more, the DRC is frequently cited as a textbook example of the 'resource curse', where a country's natural resource wealth has adverse effects on its economic, social and political well-being. This may occur as a result of economic factors (Dutch disease, absence of linkages), but also through political (corruption, mismanagement and lack of transparency, insufficient institutional capacity, lack of accountability) and conflict channels (minerals fueling the greed of armed groups or competition over land). At the local level, this manifests itself in severe governance deficits as well as conflicts. In the KCA, conflicts between multinational mining companies and surrounding communities are frequent. They occur over access to land, over the environmental consequences of industrial exploitation, or over the often violent repression of artisanal mining activities in and around industrial concessions. These often degenerate into serious human rights violations.

In keeping with the resource curse theory, the Congolese mining sector has primarily gained international attention for its association with conflict. Most awareness has been raised around the so-called 'conflict minerals' from Eastern DRC, in response to which a series of due diligence and certification initiatives has been set up. In recent years, the scope - both content-wise and geographically - of these initiatives has broadened to include database (some issues with LSM have been overlooked, for instance) and labour exploitation (including female and child labour, forced labour which is against the law) in the mines, and to extend to other minerals like cobalt. Aside from these international initiatives, the Congolese government has also taken some actions to formalize ASM. It will be important to study how these (inter)national dynamics play out at the local level, as the current organization of ASM is mostly informal. At present, ASM operators lack the financial and material resources and technical expertise to improve occupational safety, environment, health and hygiene in the mines. We also need to pay particular attention to the vulnerable position of women, particularly who might choose to work in ASM mines to gain a more significant income, but who are vulnerable to gender-based violence, and are working in poorly remunerated jobs such as crushing, sorting, washing, sifting minerals and transportation of mineral bags (on the back or on the head). In short, the multiple problems surrounding the governance and security of KCA - whether industrial or artisanal - have their roots in the province's particular history, as well as in some contemporary dynamics playing out at the national and international level. As the most important university in the region, UNILU has a crucial role to play in following up on these developments, and how they play out at the local level. At a programme level, UNILU should contribute towards improving the socio-ecological conditions of the populations living within the KCA. It is clear that governance and security considerations are central to all activities envisaged within the framework of this IUC programme. Indeed, better governance of the territorial entities and their biodiversity resources, but also the improvement of security conditions: (1) will promote better biodiversity and the quality of the benefits rendered to the population (Project 1); (2) will limit competition for space and improve health and environmental conditions in new areas through the enhancement of depolluted ecosystems, as well as develop governance principles adapted to their context (Project 2); and (3) will propose governance mechanisms for territorial entities and biodiversity resources that promote the emergence of entrepreneurship (Project 4) and agricultural activities (Project 5). The transfer of the results to the beneficiaries will be ensured in particular by the radio and television as well as community relays, while the UNILU-Society Interface will promote their valorization in the world of work within the KCA (project 6).

Describe the strategy of the project: how will it reach its objective(s)?

The project's three strategic axes of intervention are the production of new knowledge (Axis 1), training (Axis 2) and service to society (Axis 3).

Axis 1: The production of new knowledge. This axis aims to strengthen UNILU's capacities in research on governance (at national, international and local levels) of natural resources and security issues around the mines (artisanal as well as industrial). Through this project 6 to 8 doctoral theses will be realized, on issues related to governance and security in the natural resources sector. Female candidates for the complementary master's degree and then for the doctorate will be encouraged. **IR1:** The capacities of UNILU teachers-researchers in the domain of natural resources governance and security are strengthened and transferred to students and at least 6 doctoral theses are defended.

Axis 2: Training. In order to make its results more sustainable in the long term, the project on governance and security proposes to create, within UNILU, a research unit in Governance of Natural Resources (GNR) which will be integrated into the Environmental

Observatory, for basic research and the continuing training of professionals in the private and public sectors, but also an advanced and inter-disciplinary master in Natural Resources Law. On the one hand, this advanced master aims to provide UNILU's teacher-researchers with legal, criminological, sociological and technical skills for an in-depth analysis of socio-environmental problems linked to the exploitation of natural resources. On the other hand, it aims to initiate and promote the culture of interdisciplinary training in the field of security and governance of natural resources. For its operationalisation, it will use the skills of professors from the North and UNILU (faculties organizing training in humanities, life sciences and exact/applied sciences). It should be noted that the issue of security and governance of natural resources is addressed in a compartmentalised manner in the different humanities fields at the UNILU. Thus, this advanced master aims to pool or merge existing DEA programmes in the above-mentioned fields in order to fill this gap. **IR2:** The research unit and the advanced master in natural resource law programme are operational and integrated into the structures of UNILU.

Axis 3: Service to society. The project will include all relevant stakeholders, including mining operators (large-scale as well as small-scale), but also affected communities and community organisations, such as women's organizations and organisations for the protection and promotion of women's rights within the KCA, in the co-production of knowledge. As such the stakeholders will be part of the research design, data collection, and data analysis through continuous discussion. External actors (public/private sector agents, non-governmental organisations, secondary school teachers, etc.) will benefit from in-service training organised by the research unit. **IR3:** The knowledge is co-produced and disseminated together with local stakeholders.

Analysis of end-users / final beneficiaries: identify the end-users of the project results and describe the uptake strategy of the project (incl. structural barriers for end-users).

The final beneficiaries of the results of the project are (1) UNILU through capacity building of its academic and scientific staff and the establishment of the research unit in Governance of Natural Resources and the creation of an advanced master in Natural Resources Law for the benefit of graduates; (2) the communities living within the KCA through improved knowledge on their rights and obligations on issues of governance and environmental protection; improved relationships with mining operators, and improved working and living conditions in the mines, especially for women; (3) (mining) operators within the KCA through the respect of human rights through societal accountability and the appropriation of the principles of good governance; and (4) state services and NGOs through the appropriation of the principles of good governance and environmental protection. End-users may encounter structural challenges and obstacles: the limited involvement of traditional and political authorities, the lack of consistency of state agents participating in training, the low level of collaboration between stakeholders, the language barrier, and so on. UNILU will respond to these challenges thanks to its knowledge and understanding of the local context and its long tradition of collaboration with beneficiaries and end-users. The academic authorities of UNILU will support the structures strengthened by the project and ensure the sustainability of the improvements achieved. Thanks to the collaboration with UNILU, the political and traditional authorities will facilitate the work in the areas concerned and become involved in the production and dissemination of research results. Finally, a task force bringing together all the project stakeholders will be set up at the beginning of the project and will make sure, through a high-quality training of the community partners, to assist local communities to overcome the inertia linked to the application of governance principles adapted to the KCA context.

Presentation of the project team: present the project team, the available expertise and the expertise sought for.

Proposed local project leader	Leader: Laurent Ngoy Ndjibu; Assistant: Gabin Bady Kabuya; Secretary: Josephine Kaunda Kitalu
Local project team (<i>Other involved staff: professors, assistants, (administrative) collaborators, etc.</i>). Also mention involved departments/faculties/universities.	Were involved in the drafting: Faculty of Law: Laurent Ngoy Ndjibu, Grâce Tshoma, Pascal Kakudji; School of Criminology: Gabin Bady Kabuya; Faculty of Social, Political and Administrative Sciences: Olivier Kahola Tabu; Faculty of Arts and Human Sciences: Joseph Kasongo, Léon Michel Ilunga.
Overview of available domains of expertise in the project team	Economic analysis of law and governance; Criminal justice reform, sexual violence, corruption; Governance: company-community-state relations; Public and private security in the mining sector; Communication, mining governance and social responsibility; Mining and child protection; Gender and protection of women's rights; Mining, environment and natural resource management; Peace and governance.
Comments on the expertise sought for at level of the Flemish HEIs	Development engineering; Gender and security (violence against women and sexual harassment), Actor-oriented approach (resistance of local actors), Rural development, Critical agrarian studies (land grabbing), Poverty and inequality, Political ecology, Ecological economics, Territorial decentralization; Multilingual communication (interpretation and translation); Development engineering; Gender and protection of women's rights; Environmental law; Environmental criminology.

7.4. Project 4: Entrepreneurship

Objectives: State the objectives of the project. What do you want to realise through the project (medium-term (5 year) objectives). To what long term objectives will the project contribute (can be both internal and external to the university)

In the DRC, women are generally more entrepreneurial in the informal sector than men. Thus, this project on entrepreneurship aims to contribute to the improvement of the living conditions of the KCA population through the promotion of entrepreneurship mainly among women, young graduates (girls and boys) as well as vulnerable people excluded from the labour market and low-income people such as the disabled, widows, wives of demobilised soldiers, young people living on the street, etc., but also to develop strategies for the eco-responsible (or environmentally friendly) processing of raw materials (minerals). Specifically, this project proposes to (1) strengthen the emergence of entrepreneurship through the training of scientific and academic staff, with a focus on young female graduates and women employees of UNILU; (2) strengthen the capacity of women, youth and vulnerable people to become entrepreneurs; (3) organize the socio-professional reintegration of young adults living on the street; (4) establish an observation laboratory for the collection of a critical mass of information on the commercial elements of agricultural and food markets in the KCA for investors and entrepreneurs in this field; (5) create an incubation (start-up) and research unit on entrepreneurship affiliated to the UNILU-society interface, which will particularly encourage female students at the end of their studies and young researchers to start up; and (6) implement eco-friendly approaches to mineral processing (or the valorisation of mining waste) in order to strengthen the UNILU-enterprises network. In the medium term, this project aims at training qualified teachers-researchers (women and men) and acquiring the technical tools enabling UNILU to develop an expertise in entrepreneurship, especially for women and vulnerable people. Through these specific objectives, the project's long-term goal is to increase the capacity of women, girls and boys, and vulnerable people of both sexes to empower themselves through the materialization and implementation of projects that are as innovative as they are financially and economically profitable. In addition, it also aims to encourage women to work in the formal sector. This project (and therefore in the longer term, the observation lab and start-up mentioned) could be the link between enterprises linked, closely or remotely, to UNILU. UNILU and this project 4, therefore, have a central role in the networking of enterprises, which by a 'snowball' effect will improve local living conditions through more entrepreneurship and mitigating the socio-economic difficulties of the local population.

Explain the link with the context analysis, the programme objectives and the other projects. Detail the context analysis if needed (e.g. the specific theme, specific challenges of the departments involved, the local/sectoral context, etc.).

The KCA has experienced steady population growth since the beginning of the 21st century, driven by the mining and extractive industries; however, the economic performance of the area contrasts with the living conditions of the population. In particular, the very tight labour market and problems of poor governance do not allow the population to benefit from the industrial exploitation of KCA's natural resource wealth. In addition, women and young people (boys and girls), who represent more than 50% of the actors involved in artisanal mining and subsistence agro-pastoral activities, face very severe living conditions, including violence, harassment of all kinds and forced labour. It should be noted that since the bankruptcy of parastatal companies (i.e. Gécamines, SNCC, etc.) that exploited natural resources and other sectors, women are gradually becoming heads of households with the loss of formal employment of the male heads of households. In addition, the shortage of qualified researchers in the field of entrepreneurship at UNILU means that there is a lack of academic expertise capable of providing sustainable technological innovations and scientific and entrepreneurial leadership. To date, only one woman at UNILU (Faculty of Economics Sciences and Management) is carrying out doctoral research in entrepreneurship under the supervision of a Professor from the ULiège, thanks to ARES-CCD funding. Consequently, the few measures taken to promote sustainable management of the entrepreneurial culture and the improvement of the socio-economic conditions of the populations living within the KCA have so far been implemented without the scientific support of experts in the field. This approach (in which UNILU researchers are trained in new entrepreneurship techniques by exploiting the different value chains in various fields) will enable UNILU to become a crucible for training and support for young entrepreneurs. Through this project, we aim to promote entrepreneurship and thus reduce unemployment, lower the level of poverty in households and boost economic growth through the creation of micro-enterprises and local businesses. This will enable UNILU to participate in the creation and improvement, by 2032, of the socio-ecological conditions of the populations living in the KCA through the development of entrepreneurship, especially for women and vulnerable people.

This project on entrepreneurship is linked to the other academic and cross-cutting projects developed through the IUC programme. Through the introduction of entrepreneurship to the people of the KCA, the pressure on natural resources (especially forests) will be reduced, which has the positive consequence of preserving biodiversity to some extent in order to optimise the ecosystem services it provides (Projects 1 and 2). In addition, women and youth working in ASM (e.g. carrying mineral bags on the back and on the head; mineral washing) are highly exposed to trace metals, resulting in the deterioration of their health. The creation of enterprises in other income-generating activities will protect both women, men and young artisanal miners from exposure to toxic metals, which will favor the reduction of certain diseases (Project 2). The agricultural techniques highlighted through project 5 will be shared with the KCA populations, especially women and young people, who are willing to engage in agricultural entrepreneurship. Finally, in the KCA, mining companies generally hold vast areas of land under concession. This regularly leads to cases of negative externalities (various forms of pollution, etc.) and cases of land conflicts with the surrounding population, especially those engaging in agricultural entrepreneurship. For this reason, improving the governance of land resources, as well as security conditions (project 3), will enable the surrounding population to have access to the land on which they can carry out income-generating activities. Populations wishing to develop businesses, focusing on other income-generating activities (other than mining and the exploitation of forest resources), will have access to the innovative approaches to entrepreneurship developed by UNILU researchers, in particular through extension sessions organized by the radio and television school, but also through continuing education organized with the support of the UNILU-society interface (project 6).

Describe the strategy of the project: how will it reach its objective(s)?

The project has the following strategic axes:

Axis 1. Academic and research aimed at strengthening the pedagogical and technical skills of the teaching staff and mobilising relevant human resources, based on doctoral research (6-8 PhD theses), mainly in co-supervision (in pairs) with the Flemish partners. **IR1:** The competences of UNILU researchers on entrepreneurship are strengthened and transferred to students and at least 6 PhD students are trained.

Axis 2. Training thanks to the creation of adapted and evolving continuous training (inter-faculty) in entrepreneurship for the benefit of external actors (women, young people, workers, etc.), but also through the integration of entrepreneurship teaching in the course programmes of UNILU for the benefit of students. These continuous training courses will be organised by the members of the observation laboratory for the agricultural and food markets and an incubation (start-up) and entrepreneurship research Unit. Teacher-researchers of UNILU will support these continuing education programs. **IR2:** A programme of continuing training is operational and the teaching of entrepreneurship is integrated into the course programmes of UNILU.

Axis 3. Service to Society promoting communication, knowledge transfers and support for actors in the field of entrepreneurship. This support will be provided through the creation of two multidisciplinary structures: an observation laboratory for agricultural and food market and an incubation (start-up) and entrepreneurship research Unit, which will be part of the Environmental Observatory. Also, thanks to this project, a network will be created between companies and UNILU (multiple helix approach). **IR3:** Research support structures are being created and the results obtained are disseminated to all local actors.

Analysis of end-users / final beneficiaries: identify the end-users of the project results and describe the uptake strategy of the project (incl. structural barriers for end-users).

The final beneficiaries/users of the project are: (1) UNILU, through the creation of research support structures, the academic succession assured and the young graduates trained who will be able to set up their own businesses; (2) women, men and young people working in various trades, including those working in the mining sector, who will be converted to other income-generating activities. The same applies to young people living on the street; (3) vulnerable people whose employability is almost nil because of their handicaps and the ensuing stigmatization; (4) the general population of the KCA in view of the numerous socio-economic spin-offs inherent in the realization of the project's various axes; and (5) businesses in the region whose employees will be interested in some of the themes proposed during the continuous training.

End-users may encounter structural challenges and obstacles: the low involvement of traditional and political authorities, the inconsistency of state agents participating in training, the low level of collaboration between stakeholders, the language barrier. UNILU will address these challenges thanks to its good knowledge and understanding of the local context and its long-term collaboration with beneficiaries and end-users. UNILU will interact continuously with the final beneficiaries (through the advisory board, etc.) during the implementation of the project and will ensure that they receive the necessary training on how to apply the new technologies developed. A community of stakeholders will be created through a platform or a framework for exchanges that will be regularly animated and whose aim is to share information. In addition, meetings with all stakeholders (UNILU, enterprises, women's associations, youth, FEC, state services) will be organised, on a rotating basis in the KCA agglomerations, every 6 months in order to evaluate and reframe the different activities to be carried out within this project. Also, the mass media will be solicited to popularise the project activities to the entire KCA population. Finally, external partners (e.g. NGOs) will be supported through training so that they can effectively communicate and disseminate the data produced by the project.

Presentation of the project team: present the project team, the available expertise and the expertise sought for.

Proposed local project leader	Leader: Pascal Sem Mbimbi ; Assistant : Jules Nkulu . Secretary : Mme Yvette Kabwe Masangu.
Local project team (Other involved staff: professors, assistants, (administrative) collaborators, etc.). Also mention involved departments /faculties/ universities.	<u>Were involved in the drafting:</u> Faculty of Economics and Management: Pascal Sem Mbimbi, Maguy Nzuzi; Faculty of Arts and Human Sciences: Nathalie Kabongo Mukadi, Flavie Kishiko Banza; Faculty of Social, Political and Administrative Sciences: Kimba Kapanda; Faculty of Agronomic Sciences: Jules Nkulu, Bill Kasongo, John Tshomba; Faculty of Sciences: Didier Kumwimba Seya. Polytechnic Faculty: Léon Zeka Mujinga.
Overview of available domains of expertise in the project team	Business plan design, Management of human resources; Economic and financial analysis of sectors, Market analysis and project evaluation; Management and promotion of women; Sociology of development; (Modelling of) Mining waste management and valorization; Food processing; Corporate communication.
Comments on the expertise sought for at level of the Flemish HEIs	Agricultural and non-agricultural entrepreneurship; Entrepreneurship coaching; Setting up and managing a start-up; Modelling and quantification of Mining waste valorization; Communication in entrepreneurship, Translation and interpretation; Anthropology of development; Rural economy, Green energy, Diversity and chance equality.

7.5. Project 5: Climate smart agriculture for sustainable food systems

Objectives: State the objectives of the project. What do you want to realize through the project (medium-term (5 years) objectives). To what long term objectives will the project contribute (can be both internal and external to the university)

UNILU has already benefited from several agricultural projects including projects on crops (e.g. maize, wheat, banana, seed potato as well as on *in vitro* propagation and biofertilizers) and animal production (the evaluation of the impact of fodder contaminated with toxic metals on the zootechnical performance of goats and guinea pigs). Project 5 will use the experiences of previous projects to create at UNILU a center of excellence for scientific research on sustainable crop-livestock production and job training in the KCA. In the medium term, this project aims at training the next generation of academics and at strengthening the support structures for research at UNILU with focus on climate change resilient food production and innovative job training methods for agropastoralism that takes into account the motivation of the beneficiaries. Given global climate change which affect crop and livestock production, and non-timber forest products, integration of the needs of the beneficiaries and threaten food security, in the long term, project 5 must result in practical innovations that will harness synergies between crop, livestock and agroforestry production to improve economic and ecological sustainability of agricultural systems and at the same time, provide a flow of valued ecosystem services. The development of expertise during the project will support (1) the creation of a Centre of Excellence in climate smart resilient agricultural systems within the Environmental Observatory (Project 6), by upgrading scientific equipment as well as extension services, and (2) NGOs and small producers' organizations to take ownership of the results of this project for their well-being.

Explain the link with the context analysis, the programme objectives and the other projects. Detail the context analysis if needed (e.g. the specific theme, specific challenges of the departments involved, the local/sectoral context, etc.).

Development actors working with farmers and farmers' associations in DRC (researchers, technicians, agro-technical auxiliaries, specialized workers) have little knowledge of climate smart agriculture, low-input agricultural production systems, improved livestock techniques, processing and conservation of animal products and vegetable products, valorization of medicinal plants for animal care, etc. It is important that their knowledge in these areas is improved so that the technological innovations can move from traditional systems to more environmentally sustainable agriculture and yields substantial income that will help reduce food insecurity. The establishment of such a system based on innovative techniques and methods is highly dependent on changing attitudes and the adoption of new practices within peasant farming communities. To achieve this, it is important that research structures such as universities and research centers collaborate with each other to create, together with development actors, a learning network and an interface that listens to the rural world and is able to sensitize them to innovations. Agricultural production in Upper-Katanga and Lualaba provinces is one of the main sources of income and food for rural populations and those living on the outskirts of the big cities. Unfortunately, crop production techniques are generally based on traditional systems of felling and burning forests (slash and burn), which contribute to soil impoverishment while degrading the entire environment. In urban areas, market gardening and vegetable gardens as a source of food production, income generation and employment for low-income groups, particularly women, should lead to land tenure policy that facilitates access to available land. There is a vicious circle in the KCA: the area is characterized by traditional techniques, poor soils and limited in availability resulting in low incomes that generally do not allow for the purchase of agricultural inputs. In the same way, traditional livestock production consists of small livestock and barnyard animals. One of its main characteristics is rabble-raising, lack of veterinary care, improved feed supplements to animal production, and inappropriate husbandry techniques. Production levels in these systems are generally low and do not guarantee food security for rural populations who are highly dependent on their land and animals for their livelihoods. This situation leads to massive food imports and in this context, the establishment of sustainable crop-livestock systems based on a climate smart approach which emphasises agricultural practices that improve market linkages, reduce post-harvest losses and conserve agricultural biodiversity will contribute to increase production while still focusing on environmental sustainability. To become more resilient and better able to adapt to changing conditions, the proposed crop-livestock system will rely on a more ecological process based on resources at the disposal of peasants, with fewer non-renewable external inputs. Moreover, the agro-industry is almost inoperative to the extent that 70% of the local food deficit is made up by imports, which constitutes a large budget (which could be used for other aspects such as improving access to health care) and economic pressure for this region. The period of containment following the Covid-19 pandemic has just reminded us, not only of the need for local agricultural production (vegetable gardens for example), but also of the need for their packaging and processing. Therefore, this project aims to improve, by 2032, the socio-ecological framework of the KCA population with regard to crop-livestock production and job training. This project on climate smart agriculture for sustainable production is linked to the other academic and cross-cutting projects developed through the IUC programme. Through the conservation and enhancement of biodiversity in cropping systems, the pressure on biodiversity resources will be reduced (project 1). By introducing women and children working in the artisanal mines to agricultural activities through job training, their exposure to trace metals will be reduced and consequently their health conditions will be improved. Likewise, the cleared areas could be valorized through agricultural activities (project 2). In the KCA, mining companies generally have vast tracts of land to which they relocate local people, depriving them of space for agricultural activities. Improved governance rules for land resources, as well as improved security conditions, will enable native people to have the land on which they can carry out agricultural activities (Project 3). The innovative agricultural techniques developed through this project will be shared with the KCA population, with a focus on women who wish to engage in agricultural entrepreneurship (project 4). Finally, the transfer of the results to the beneficiaries will be ensured by the radio and television school, while the UNILU-Society Interface will promote their valorization within the KCA (project 6).

Describe the strategy of the project: how will it reach its objective(s)?

The formulated project responds to a predisposition of UNILU to play the role of a driving force in the development of the KCA region in the agricultural field, given that at least 60% of the population relies on agriculture and that children and women still work in mines:

Axis 1. Research: Development of agricultural production techniques and processing that are integrated, evolutionary and adapted to the peasant context of the region, as well as the identification of the determinants of socio-professional integration, particularly gender (e.g. through doctoral research). The aim is to enhance nutrient and soil management, to enhance crop diversity lead to a more optimal crop rotation, to improve the integration of plant, animal and aquacultural production, to promote biofertilizers and other bioagents that improve crop performances, to improve crop and animal protection, to develop domestication of some edible fungi (i.e. pleurotes) and to promote the

production of non-conventional crops and livestock including insects, etc. The project activities must result in better agro-pastoral planning and creating a the better life conditions for peasants. Nearly 8 doctoral research projects (50% women) are conceivable in this field. Twenty master students will be selected annually on the basis of the relevance of their project, and will carry out their final thesis work on the framework of this project. **IR1:** The skills of UNILU researchers on climate smart agriculture for sustainable production are strengthened and strongly embedded in the academic programs of UNILU and at least 6 doctoral students and 50 master students are trained during the 10 years of the programme.

Axis 2. Training: We will use 'train the trainer concept'. The training will be addressed to people directly involved in farming in their environment through sensitizing workshops, field schools and demo-plots in collaboration with INERA which has developed a strong network of peasant associations and NGOs "such as APEFE" involved in agriculture and education. Collaboration with the "Centre de Recherche en Agro-Alimentaire" (CRAA) will help train farmers in food processing technology based on local agricultural products. Therefore, UNILU will focus on persons responsible for extension activities within organizations. UNILU will also develop training modules or curricula for trainers in secondary schools with an agricultural programme, to transfer innovation to secondary school pupils. This training module will cover agricultural trades, including rural construction, etc. The skills available in the project will therefore ensure the training of trainers. It will also create an advanced Master in Agro-ecology with a dual purpose (research and professional) in order to strengthen the skills of UNILU teacher-researchers (and external actors) on sustainable agriculture in a context of climate change. **IR2:** Education programs oriented to persons responsible for extension are operational and an advanced master's course in agro-ecology is included in the UNILU curriculum.

Axis 3. Service to society: Installation of demonstration sites of innovative agricultural practices developed through doctoral research; provision of decision-making support tools to state technical services and contribution to the development of agricultural and employment policies at the regional level. The creation of a Centre of Excellence in climate smart resilient agricultural systems within the Environmental Observatory (project 6) will play a direct role in accompanying peasants during training, directing them to structures which support them (e.g. to people who are experts in entrepreneurship for those who want to get started) and an indirect role in improving household incomes, increasing food security and thus reducing poverty through improved agricultural practices. **IR3:** The results obtained are disseminated to local stakeholders and the Centre of Excellence in climate smart resilient agricultural systems is created.

Analysis of end-users / final beneficiaries: identify the end-users of the project results and describe the uptake strategy of the project (incl. structural barriers for end-users).

The final users and beneficiaries are 1) UNILU researchers, who will be largely influenced by capacity building in the form of training and the acquisition of research equipment. Their acquired expertise will be beneficial to the students who will follow their training; 2) the agents of public services, NGOs and Farmers' Organizations will be largely influenced by the training in crop and livestock techniques based on the principles of sustainable agriculture. As specialized technicians, they will be in charge of supporting and accompanying farmers. In particular, through the structure "women's network for development", it is women who will be targeted through a consultative committee of stakeholders and/or through a community involvement center; 3) peasants, farmers and agricultural enterprises will show a lot of interest in support and accompaniment on cultivation and breeding techniques based on the principles of sustainable agriculture. They will be the final beneficiaries of the various supports and will be involved in the production and dissemination of innovations to others; 4) the mining companies that support farming households working on their concessions will also benefit from the training made available to them by the project. End-users may face the following challenges and structural obstacles: (1) the low involvement of traditional and political authorities in making demonstration sites available, (2) the inconsistency of state agents who participate in training as a result of their frequent transfers, (3) the low level of collaboration between miners, state services and CSOs working in the agricultural sector, (4) limited ability of local populations to access the knowledge produced as a result of language barriers, (5) the reluctance of miners and state services to share the data needed by the project team. UNILU will meet these challenges through its knowledge and understanding of the local context, and collaboration with beneficiaries and end-users. To deal with the risks, some active measures will be used: (i) integration of local population as labor for certain activities such as preparation of a demonstration site, (ii) train several people within each public service and pay particular attention to the training of trainers (i.e. local leaders), (iii) give priority to activities which intensify collaboration (i.e. demonstration session), (iv) translation of research results and their vulgarization into local languages by local community relay, and (v) educating stakeholders by showing them the value of sharing their data with the researchers involved in the project.

Presentation of the project team: present the project team, the available expertise and the expertise sought for.

Proposed local project leader	Leader: Florence Kampemba; Assistant : Paul Mobinzo; Secretary : Henriette Tshiwiza
Local project team (<i>Other involved staff: professors, assistants, (administrative) collaborators, etc.</i>). Also mention involved departments /faculties/universities.	Were involved in the drafting: Faculty of Agronomics Sciences: Florence Kampemba, Robert Prince Mukobo, Michel Mazinga, Bill Kasongo, Innocent Tshibangu Mwamba, Auguste Chocha. Faculty of Veterinary Medicine: Paul Mobinzo Kapay, Victor Okombe Embeya, Hortense Kalenga, Idi Ngona. Faculty of Psychology and Educational Sciences: Jacques Kalumba, Marthe Kabwe. Faculty of Social, Political and Administrative Sciences: Alex Nyumbaiza.
Overview of available domains of expertise in the project team	Mycology, Forest ecology, Plant production, Small livestock and poultry production, In vitro cultures, Circular agriculture, Cereal improvement and production, Biofertilizers, Agricultural production Aquaculture, Agricultural sociology, School and work psychology, Clinical psychology, Processing of agricultural products, Pharmacognosy and animal physiology, History and sociology of agriculture.
Comments on the expertise sought for at level of the Flemish HEIs	Edible Mushroom Production, Domestic Animal Nutrition, Pasture Improvement, Domestic Animal Improvement, Integrated Agriculture, Biofertilizers, Integrated Production Systems and integrated crop protection, Aquaculture, Education, food safety, food technology, natural products and drugs discovery, food toxicology, aquaculture, developmental sociology, clinical, occupational and school psychology.

7.6. Project 6: Institutional capacity building

Objectives: State the objectives of the project. What do you want to realise through the project (medium-term (5 year) objectives). To what long term objectives will the project contribute (can be both internal and external to the university)

This project responds to a predisposition of UNILU to play the leading role in the development of the KCA in areas that constitute the vocation of this region (exploitation of mineral and forest resources for various purposes) and the strategic and thematic priorities identified within UNILU. Globally, it aims at enabling the UNILU staff (teaching, research and technical-administrative) to take up the challenge of improving the socio-ecological conditions of the populations living within the KCA. More specifically, the project aims to strengthen (1) administrative governance in its organizational and operational aspects of management, technical and administrative services; (2) academic governance by relying on academic succession, continuing staff training, evaluation, integration of ICTs and languages; (3) research governance with regard to the organizational aspects of the research support office (RSO) and libraries; (4) the visibility of UNILU in the region by improving the operational and organizational aspects of the University Press (PUL) and printing, the UNILU-society interface (USI), the UNILU website and the creation of a UNILU radio and television school (cf. synergy and complementarity with projects funded by ARES-CCD, VLIR-UOS, etc.); (5) the creation of an Environmental Observatory within which existing specialised research centres (i.e. toxicology centre, environmental laboratory, etc.) will be federated on the one hand and research units or research centres will be created on the other hand (Projects 1, 3, 4 and 5); (6) increase international visibility to attract new partners and new funding.

Thus, in the medium term, the project aims to support the training unit for technical-administrative staff and to improve the operational and organisational aspects of the RSO, the USI, the university pedagogy unit, the Doctoral School, the computer resources service, the library and the quality assurance unit. Furthermore, this project envisages the creation of a computer centre and a centre for digitization of archives for better storage/processing of the large masses of data, to avoid the deterioration or accidental loss of the originals, thus facilitating access for users. Moreover, an Environmental Observatory will be created which will centralize knowledge and research in the environmental field in a mining context. Finally, a UNILU radio and television school will be created to ensure better popularization of good practices in the various fields for the benefit of local communities. Subsequently, through this project, the programme will support in the medium term the training of trainers or facilitators of the above-mentioned structures. In the long term, the technical and administrative staff (at the level of the central administration and UNILU faculties) will be trained to gain the necessary skills to fulfil their tasks and will thus contribute to improving the management of the university, the service to the faculties as well as the visibility and valorisation of the results obtained by the UNILU researchers.

Explain the link with the context analysis, the programme objectives and the other projects. Detail the context analysis if needed (e.g. the specific theme, specific challenges of the departments involved, the local/sectoral context, etc.).

UNILU's IUC programme includes the strengthening of academic capacity as one of the areas of internal change. These include the improvement of the existing libraries (through a subscription to scientific journals, PC equipment, internet connection for students and researchers from UNILU and the region), of the technical research services and of the administrative service as a whole, which constitute the pillars of the organization to conduct high-quality research that will feed quality teaching and provide adequate services to the community. With UNILU staff strengthened in research and communication capacities, it will be possible to build up a reliable research database which will enable effective advocacy with decision-makers and other stakeholders: enterprises, NGOs, local communities, etc. In order to overcome resistance (from local communities, companies or the public services), UNILU will regularly provide summaries / translations of its studies and surveys in French, English and local languages. It will then organize focus groups where all stakeholders will make their views heard, and resolutions will be documented and disseminated through ICTs (website, university radio) and other, more traditional means such as box of pictures and posters. This project is linked to the 5 thematic projects developed within this IUC programme. The training of laboratory staff will allow a better operationalisation of the research support structures created or strengthened thanks to the project. Thanks to a better operationalisation of the training unit, the administrative staff involved in project management (secretaries) will see their skills strengthened. The contact of teachers-researchers with mining operators coming mostly from English-speaking countries will be facilitated through the learning of (academic) English. The results obtained from the 5 thematic projects will be disseminated through the university radio and television created in this project and promoted via the UNILU-society interface. The continuous training to be developed by the doctoral school, as well as the improvement of library performance, will help to strengthen the skills of the doctoral students recruited. The support structures for the research carried out in the 5 academic projects will be strengthened in terms of equipment and sufficiently trained personnel (Figure 4).

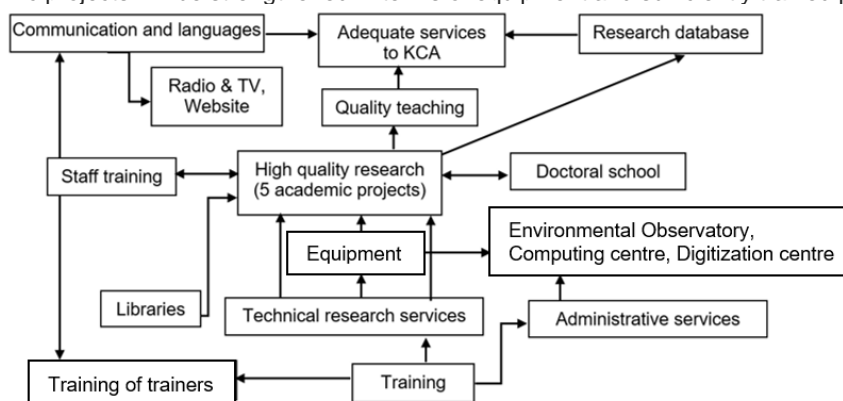


Figure 4. Overview of the synergy and complementarity of the transversal project and the 5 academic projects

Describe the strategy of the project: how will it reach its objective(s)?

Institutional capacity building will be done through a four-pronged strategy.

Axis 1: Capacity building of staff (teachers, researchers, technical-administrative staff) will be done through training (seminars and workshops) dedicated to the staff of the central administration structures (directorate of academic affairs, finance and personnel, libraries, etc.) and faculties (administrative secretary, academic secretary, accountant, auditor, laboratory technicians, etc.) and the professionalization of the bachelor cycle. Prior to the training courses, a SWOT (Strengths, Weaknesses, Opportunities and Threats) survey will be organized at the UNILU staff level. Following this survey, training themes will be proposed in order to address the technical/methodological weaknesses identified during the SWOT analysis and will be integrated into a training catalogue. **IR1:** The skills of the teaching, research and technical-administrative staff will be strengthened and integrated into the UNILU structures.

Axis 2: Support in terms of equipment within the existing units (quality assurance unit, academic English laboratory, university pedagogy unit, computer resources service, training unit for technical and administrative staff, research support office, etc.). In addition, in order to ensure their better functioning through the densification of their activities, other complementary structures will be created, notably the Environmental Observatory, the computing centre for the management of data from different thematic projects via the central administration, the archive digitization centre to facilitate access to existing data relevant to researchers as well as the UNILU radio and television school for the popularization of the results obtained in the thematic projects. Both for existing structures and for structures to be created, staff will be trained in the use of the equipment. **IR2:** Research support structures will be created and/or improved in terms of operationalization.

Axis 3: The trainers will be retrained to ensure the training of staff at both the central administration and UNILU structures. The trainers will be trained by staff from Flemish universities, locally and/or in Belgium. **IR3:** The trainers of trainers have benefited from the training and are transferring their knowledge to the UNILU staff.

Axis 4: Valuing the results and improving strategies for their transfer to the different stakeholders by strengthening UNILU's interaction with the world of work in the KCA region through the consolidation of existing partnerships and the signing of new ones. A framework for sharing experiences will be established and regular meetings will be organized. **IR4:** The results obtained will be valorized and transferred to the labour market of the KCA.

Overall, this project, as others, will also take into account the gender factor in its strategy and will include a significant number of women in the academic, scientific, administrative and technical staff in order to improve the ratio of women better equipped and assuming more and more responsibilities within the UNILU. Women heads of UNILU departments should be trained to become trainers themselves in order to increase the proportion of women in UNILU's decision-making bodies and thus achieve a better gender balance at all levels (operational, decision-making, etc.).

Analysis of end-users / final beneficiaries: identify the end-users of the project results and describe the uptake strategy of the project (incl. structural barriers for end-users).

At UNILU level, the targets of this project are: (i) the administrative and technical staff of UNILU, who will benefit from significant support in capacity building through continuous training and the establishment of better adapted technical conditions, in particular the use of ICTs in the performance of their daily tasks; and (ii) academics, UNILU researchers and students who will be able to rely on the better-supplied documentary resources of libraries with quality staff, better equipped laboratories managed by qualified technicians, and more competent administrative staff to organize research and teaching activities. At the external level, the beneficiaries are: (i) public and private services whose staff can be directly associated with UNILU's in strengthening managerial capacities, in particular through the use of ICTs; (ii) the KCA's higher education and university establishments which use UNILU's infrastructure, in particular libraries and laboratories, for their training and research needs at all levels. It should be noted in this respect that UNILU is, together with the University of Kinshasa and the University of Kisangani, one of the three public institutions authorised to organise doctoral training in the DRC; (iii) the population of the KCA as a whole, which will obtain quality services from UNILU thanks to its qualified staff, its better equipped and optimally functioning laboratories and research centres.

Presentation of the project team: present the project team, the available expertise and the expertise sought for.

Proposed local project leader	Leader: Donatien Dibwe; Assistant : Irène Ngoie Kyungu Kuboko. Secrétaire: Mme Nelly Ngoie Mukabe.
Local project team (<i>Other involved staff: professors, assistants, (administrative) collaborators, etc.,</i>). Also mention involved departments/faculties/universities.	Were involved in the drafting: Faculty of Arts and Human Sciences: Donatien Dibwe Dia Mwembu, Guillaume Nkongolo Funkwa, Georges Mulumbwa, Willy Maloba Kalala Binene, Irène Ngoie Kyungu Kuboko, Edouard Ipo Abelela; Faculté Polytechnique : Edmond Tuite Kabamba; Faculty of Psychology and Educational Sciences: Jacques Kalumba Ngoy; Computer Resource Services: Steves Chitekulu; Continuing Education Unit: Monique Tshabu; Faculty of Social, Political and Administrative Sciences: Paul Kyungu Shimbi; Finance Department: Jean Bidibo Mwafumu.
Overview of available domains of expertise in the project team	University pedagogy, Archive management, Information and communication technology, Quality assurance, Human resources management, Management of a doctoral school, Administration, Financial management, Communication
Comments on the expertise sought for at level of the Flemish HEIs	University pedagogy and management of a doctoral school, Digitization of archives, Library management, ICT applied to university pedagogy and administrative management, Management of a radio and television school, Laboratory maintenance, Printing, Governance, Curriculum development and evaluation, Quality assurance in university pedagogy and administration, External communication strategies, Networking with external stakeholders, Research management.

8. Budget indications

Total annual budget³ applied for during Phase 1 IUC Cooperation

Indicative project budget repartition⁴:

Title of project	Type ⁵	Indicative % of project budget
Biodiversity and climate change	Academic	16
Environment and health	Academic	16
Governance and security	Academic	16
Entrepreneurship	Academic	16
Climate smart agriculture for sustainable food production	Academic	16
Institutional capacity building	Transversal	20
Total		100%

Noted that all academic projects share the same overall project budget. However, the transversal project, which has both its own activities and will also support the academic projects, for this reason has 4% more in the overall budget.

DOCUMENTS TO BE SUBMITTED

<u>Annex 2</u> : CVs potential project leaders	<i>The format is included and to be followed, except if indications are included that own data formats can be added</i>
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³ See budget section in the call document. Annual IUC budget in Phase 1 is a fixed amount.

⁴ A part of the programme budget will be needed for the PSU. In this section we only want to see the relative weight of the different projects.

⁵ 2 types of projects: academic theme-based projects or Transversal Institutional Strengthening Projects (TISP)

Appendix I: Abbreviations

ACC-DRC	Analyse de contexte conjointe/ DR Congo
AFODEK	Agroforesterie pour le Développement de Kipushi
APEFE	Association pour la Promotion de l'Education et de la Formation à l'Etranger
ARES-CCD	Académie de Recherche et de l'Enseignement Supérieur – Commission de la Coopération au Développement
ASM	Artisanal and small-scale mining
AUF	Agence Universitaire de la Francophonie.
BTC	Belgian Technical Cooperation
CDM	Congo DongFang Mining
CEFOCRIM	Centre de Formation en Criminologie et Droits humains rattaché
CERCAF	Centre de renforcement des capacités de fonctionnaires de l'Etat
CHEMAF	Chemical of Africa
CIRAD	Centre de coopération internationale en recherche agronomique pour le développement
CRAA	Centre de Recherche en Agro-Alimentaire
CRSMB	Competence Centre for Rational and Sustainable Management of Biodiversity Resources
CSO	Civil society organizations
CSTs	Common Strategic Targets
DES/DEA	Diplôme d'Etudes Supérieures / Diplôme d'Etudes Approfondies
DRC	Democratic Republic of Congo
ENABEL	Agence Belge de Développement
ERASMUS	EuRoPean Action Scheme for the Mobility of University Students
ES	Ecosystem Service
ESDB	Ecosystem Services Database
ETH Zurich	École polytechnique fédérale de Zurich
EU and AU targets:	European Union and African Union targets
EU	European Union
FAO	Food and Agriculture Organisation of the United Nations
FEC	Fédération des Entreprises de la RD Congo
FFN	Fonds Forestier National de la RD Congo
FSC	Flemish Steering Committee
Gécamines	Générale des Carrières et des Mines
GDP	Gross Domestic Product
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit (Agence Allemande de Coopération Internationale)
GNR	Governance of Natural Resources
HIV	Human Immunodeficiency Virus
ICCN	Institut Congolais pour la Conservation de la Nature
ICT	Information and Communication Technologies
IFPRI	International Food Policy Research Institute
INERA	Institut National pour l'Etude et la Recherche Agronomique
IOM	International Organization for Migration
IR	Intermediate Result
IRSNB	Royal Belgian Institute of Natural Sciences
IUC	Institutional University Cooperation
KCA	Katangense Copperbelt Area
LMD	Licence, Maîtrise, Doctorat (Système dit « de Bologne »)
LSC	Local Steering Committee
MMG	Minerals and Metal Group
MRAC	Musée Royal d'Afrique Centrale
NGO	Non-Government Organizations
OECD	Organisation de coopération et de développement économiques
PSU	Programme Support Unit
RCN Justice & Démocratie	Réseau des Citoyens Justice & Démocratie
SAFEKA	Sauve la femme et la jeune fille du Katanga
SNCC	Société Nationale des Chemins de Fer de la RD Congo
TFM	Tenke Fungurume Mining
ULaval	Université Laval
ULB	Université Libre de Bruxelles

UNDP	United Nations Development Programme
Uliège	Université de Liège
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFPA	United Nations Population Fund
UNICEF	United Nations International Children's Emergency Fund
UNIKIN	Université de Kinshasa
UNIKIS	Université de Kisangani
UNILU	Université de Lubumbashi
UNIRANK	University Ranking
USAID	United States Agency For International Development
VLIR-UOS	Vlaamse Interuniversitaire Raad (Flemish Interuniversities Council), Universitaire Ontwikkelingssamenwerking (University Development Co-operation)
WBI	Wallonie Bruxelles International
WHO	World Health Organization
WVI	Word Vision International

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