

Adopted by the
Leiden-Delft-Erasmus
steering committee
on 17 June 2019

Strategy for the Leiden-Delft- Erasmus Alliance

2019 - 2024



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The Netherlands

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Strategy for the Leiden-Delft-Erasmus Alliance 2019-2024

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1. Why do we need a Leiden-Delft-Erasmus strategic alliance?

In 2012 the collaboration between Leiden University, Delft University of Technology and Erasmus University Rotterdam took the form of a strategic alliance, the ambitions of which were laid down in the profiling agenda 'Adding Value' (in Dutch). The alliance is an extension of the successful collaboration that had already been established before 2012, the most prominent achievements of which were the collaboration between the universities and the two medical centres in the medical-technical domain of the Medical Delta and the collaboration between life sciences and technology. The first phase of the collaboration in the alliance reached its conclusion at the end of 2018. Appendix I provides an overview of the achievements in this first phase. Under the flag of the LDE alliance, cooperative arrangements were formed around social themes (the LDE Centres), joint education was developed, and the range of study programmes were made more accessible for each other's students. The LDE educational portfolio offers distinct added value for students looking for a wider perspective. Five of the eight Centres have been very successful in combining the complementary strengths of the universities and making links with key social issues and stakeholders within society. They are therefore excellently positioned to meet the increasing demand for social relevance and connection. It takes time to establish a position that attracts external funding for major projects and new science.

The three universities and two medical centres have demonstrated that they can achieve much more in education, research and social impact together than they could have achieved separately. We complement each other's expertise and focus, and this complementarity enables us to deliver outstanding education and research on social, interdisciplinary issues.

The developments within society offer a favourable perspective for the future evolution of the LDE alliance. Appendix II describes how the international, national, and regional agendas are being increasingly dominated by the major social issues that call for interdisciplinary solutions. The LDE universities, with their quality, complementarity, and close proximity to each other within the densely populated metropolitan region, are excellently positioned to play a key role in this respect. This is the path we want to go down over the coming years. It does not mean, however, that we will only work with each other in the future: our universities and scientists will always have a range of different collaborative partners. What it does mean, though, is that we will collaborate in those areas where our quality, complementarity and close proximity to each other can deliver tangible added value. This has led to the formulation of the following mission.

► MISSION OF THE LEIDEN-DELFT-ERASMUS STRATEGIC ALLIANCE

The resolution of major social issues calls for intensive and collective efforts of universities working in close collaboration with social partners. Leiden University, Delft University of Technology and Erasmus University Rotterdam, together with the two medical centres, want to use their quality, complementarity and close proximity to each other to make a contribution to the global challenges that are also manifesting themselves in the metropolitan region. We are therefore ideally positioned because we are located within that region, with Rotterdam and The Hague as the key cities, and because of the diversity of our collective portfolio - both in terms of disciplines for education and research, and in terms of (basic) fundamental research, innovation, and applied research. Our geographical location and our broad scope act as a magnet for talent from all around the world. The strategic alliance is the vehicle that we want to use to bundle our portfolios and strengthen the connection with our stakeholders. In this way we will make a better contribution to the development of the region and enhance our international profile at the same time. And thus together we will increase our effectiveness and strengthen our position.



2. What do we want to achieve in 2019-2024?

Over the coming strategic period, we want to continue building in a robust and ambitious way on the platform that has already been established. Focus will be a key factor, which is why we have selected a limited number of broad social themes where we want to make a difference. The issues facing the surrounding metropolitan region are an important source of inspiration; the collaboration on these issues forms a launching pad towards international relevance and practical application. Conversely, international lessons can also be applied in the metropolitan region. In this way the universities will collectively fulfil their mission of becoming relevant universities for the cities, the metropolitan region, and society as a whole.

IN 2024:

- The LDE alliance will have established a recognisable public profile by targeting four social themes: Healthy Society, Sustainable Society, Digital Society, and Inclusive Society;
- In addition to the collaboration in the Medical Delta, a Sustainability Delta will also be set up and steps have already been taken to establish a Digital Society Delta;
- The LDE Centres will be firmly embedded within the universities and the public arena;
- Various new forms of collaboration will have been established that contribute to the four social themes;
- The education portfolio of the three universities will be much more accessible for all students;
- New joint education will have been introduced, including several joint degree programmes;
- We will have a nationally renowned knowledge centre for innovation in online and blended learning, and the educational centres will be working together on the professionalization of lecturers;
- Knowledge will be shared and partnerships developed for accommodation, ICT resources and HR projects in order to achieve advantages of scale;
- We will be participating in the social and economic development of the surrounding metropolitan region by contributing expertise, research, staff and students, and we will be working together with the region to attract international funding, trade and industry, and talent.

Our ambitions are further explained and refined in the following 3 sections.



3. What we aim to achieve: focus on four societal issues: Healthy, Sustainable, Digital and Inclusive Society

In the collaboration we focus on a number of societal themes that are closely aligned with the UNSDGs, EU Challenges, National Science Agenda and regional issues. With the UNSDGs, we are associating ourselves with an international, inspiring blueprint that is increasingly becoming the guideline for companies, social organisations and government authorities and the region, with The Hague as the world's third UN city. The EU Challenges and the National Science Agenda help us to create new collaboration and funding opportunities and by connecting to the regional Roadmap Next Economy we ensure a regional embedding and application of our activities.

By collaborating with regard to the themes 'Healthy Society', 'Digital Society', 'Sustainable Society' and 'Inclusive Society' we take on a more prominent role in society. We are each other's preferred partner for the themes and from the three universities each make a balanced contribution. The themes form a guideline for new partnerships in education and research, which will flourish in the years to come. With the current and new collaborations we give these as yet broad themes a unique profile.

Under these themes, the existing five LDE Centres, BOLD Cities, Global Heritage and Development, Frugal Innovation in Africa, Sustainability and Education and Learning develop into collaborations embedded in the universities and society. Furthermore, because they acquire their own income, from the faculties and from society (funding), they become gradually more self-sufficient.

HEALTHY SOCIETY

UNSDG:



Horizon 2020/Europe: SC Health, demographic change and Well-being

National: NWA (Personalised Medicine), health care research, healthy and save food, Topsector Life Sciences and Health

Regional: Medical Delta, EBZ Life Sciences and Health

The 'Healthy Society' theme is prominent in all relevant agendas. The Life Sciences and Health sector in the South Holland region ranks among the top when it comes to science and entrepreneurship, boasting several relevant science parks & towers and providing 217,213 jobs¹. The collaboration between the three universities, LUMC, Erasmus MC and other knowledge institutions, companies and governments in the region is well organised in the Medical Delta. This network concentrates on technological and medical collaboration focusing on prevention. Within the Medical Delta, 18 Medical Delta professors have already been appointed and there is a strong link with the international network of EIT Health. In the joint research and fund-raising between the three universities and LUMC and Erasmus MC, LSH publications and proposals dominate.

The potential of this theme within LDE is therefore great and the theme will be further rolled out, during which the Medical Delta's new strategy will be highly important, but collaboration might also start with other disciplines at other interfaces (for example in combination with the theme Digital Society (Digital Health and Well being)).

¹ Regional economic figures from the multi-year strategy 2019-2024 of Innovation Quarter, see: www.innovationquarter.nl

SUSTAINABLE SOCIETY

UNSDG:



Horizon 2020/Europe: **Circular Economy, SC's Climate, Energy and Mobility en Food and Natural resources**

National: **NWA (Sustainable Circular Impact), Topsector Horticulture**

Regional: **RNE Circular Economy, Greenport, ACCEZ, EBZ Feeding and Greening Megacities**

The transition to a Sustainable Society, with a focus on Circular Economy, is a theme with huge international, national and regional urgency. New funds for Climate and Circular Economy will be allocated within the EU and National Science Agenda. The circular and energy transition is of great importance for many sectors in South Holland, such as greenhouse horticulture and the port. Circular Economy is therefore one of the transition paths of the Next Economy Roadmap. In SmartPort, TU Delft, EUR and TNO work together with the Port Authority on energy and circular issues. The Centre for Sustainability (CfS), which focuses on the circular economy, has been set up as part of the LDE collaboration. Within this context, the CfS will have hubs in the coming years on the themes Greenport, Industry and Cities that are associated with Rotterdam, The Hague, Delft, Leiden, and the Westland in the region, and internationally with European projects including the EIT Raw Materials. The crowning glory is the prominent collaboration of CfS with the University of Wageningen, VNO-NCW and the Province of South Holland in the new triple helix organisation ACCEZ, a new knowledge and innovation programme for the Circular Economy in South Holland. Under the LDE theme 'Sustainable Society' we want to create a new LDE delta in the coming period, within which the Centre for Sustainability will continue its work.

THE LDE-DELTA

The LDE Delta is an extension of our mission to utilise the added value of our complementary quality and location. We are creating a close, distinctive and regional, national and international pioneering collaboration on the theme within an LDE Delta together with relevant stakeholders. With regard to research, the delta offers the full range, from excellent fundamental research to innovation and application, with joint PhDs and joint professors appointments. With regard to education, joint education is being set up, including new joint degree courses, reaching large numbers of LDE students. With regard to societal impact, collaboration with the stakeholders (triple helix) in the delta stimulates and facilitates activities, the acquisition of regional, national and international funds and thought leadership for the theme. Hubs arise in which scientists and students from the universities and universities of applied sciences combine their research and connect it to the needs of the other parties in the hub (companies, government authorities, citizens). Operational management regards shared research facilities and giving a good example: e.g. pursuing CO₂-neutral campuses under the theme Sustainability. The 'delta' is thus not only a symbol for the three universities, the triple helix and the embedding in the metropolitan delta, but also for the social transition that the parties want to bring about.

DIGITAL SOCIETY

UNSDG:



Horizon 2020/Europe: SC Digital and Industries

National: NWA (Smart Liveable Cities, Value Creation by Big Data), VSNU Agenda Digital Society

Regional: RNE Smart Digital Delta, EBZ Cybersecurity, The Hague Security Delta

We are in the midst of a digital revolution that is one of the most important drivers of modernisation in the society and the economy. The digital revolution is therefore also relevant for all scientific disciplines and the LDE alliance can be used as a vehicle to make the whole more than the sum of its parts through interdisciplinary collaboration. This is why we are joining the national research programme Digital Society that was set up by the joint universities. The aim of this programme is to give the Netherlands an internationally leading position in the field of people-oriented information technology and to find solutions to the global challenges that digitisation entails. The programme focuses on seven themes. The national theme Digital Cities and Communities is led from within the LDE Centre for BOLD Cities. In addition, LDE scientists are the leaders of Health and Well being and of Responsible Data Science, and they have a prominent role within the agenda for Learning and Education and Safety and Security and in the national development of the entire programme. A promising development for the connection is that digitisation is also one of the two themes in the new sector plan Social Sciences and Humanities.

The ICT sector now accounts for about 5% of the employment in South Holland. But digitisation is an major driver for the emergence of a new manufacturing industry ('smart industry'), for example within the High Tech Systems and Equipment sector (including Robotics), one of the largest sectors in South Holland with more than 100,000 jobs. The LDE Centre for BOLD Cities focuses on the social consequences of digitisation and has a strong connection with the cities of Rotterdam and The Hague. The LDE Centre for Education and Learning will focus on the digitisation of higher education in the coming years. In the field of cyber security, a minor and an executive master degree have been created. In the field of computer science, LDE scientists are increasingly jointly publishing papers, often with TU Delft and LSH scientists from Leiden or Erasmus MC.

This is therefore a theme of great importance both scientifically and socially for LDE collaboration. The national agenda will be further expanded in the coming period, for example in the form of applications for the National Science Agenda. Within LDE, we will seek a unique profile within this. The possible collaborations and interfaces between the LDE scientists involved in the agenda and other relevant parts and projects of the universities will be explored for this purpose. The province South Holland, MRDH and EBZ are engaged in an exploration of the digital economy and infrastructure to discover the economic niches within the region. If collaboration has sufficient substantive potential, we will then answer the question whether a Digital Delta might offer a good organisational embedding of LDE collaboration in the region.

SPACE FOR SCIENCE AND SOCIETY

The aerospace cluster has a unique position in the region, contributes to innovation and is relevant to issues regarding the LDE themes in the medical, digital and sustainability fields. Approximately 80% of all space-related activities take place in South Holland, with the European Space Agency/Research Technology Center (ESA/ESTEC) at Noordwijk as the hub. There is already a long-term collaboration with TU Delft and Leiden University, collaboration takes place with RSM Erasmus University in the MSc International Management. Thanks to the arrival of SRON (the Netherlands Institute for Space Research) in the region in 2021 and the development of a Space Campus in partnership with the State and Province of South Holland, the cluster will gain an even more extended footprint in the region. The Space Campus will become a knowledge hub in which space data will be exploited (e.g. earth observation for climate, heritage, food and water applications). This offers unique opportunities for teaching and research opportunities in Leiden (e.g. Space Law & Physics), Rotterdam (Space Economy & Entrepreneurship) and Delft (Space Technology) and collaboration in these fields. If there is enough potential for a balanced LDE contribution and collaboration, setting up an LDE Centre 'Space for Society' is an option.

INCLUSIVE SOCIETY

UNSDG:



Horizon 2020/Europe: SC Inclusive and Secure Society, Migration

National: NWA (Resilient Societies, Youth in Development, Living History)

Regional: RNE Next Society/Next Education

The major societal changes and the Sustainable Development Goals, need inclusiveness: how do we get as many people as possible to go along with the transitions and prevent growing differences within countries, between countries and between the Global South and the Global North. It is more than just a short-term economic agenda: 'next society' with an emphasis on innovation in education is therefore also one of the components of the Roadmap Next Economy.

'Inclusive society' is a new theme for LDE, and will take on the resemblance of a development agenda in the coming period, strongly focused on connecting the Social Sciences and Humanities disciplines with other disciplines relating to major societal challenges. The collaboration with the city of The Hague as an international administrative centre and a third UN city and the city of Rotterdam as a world port offers opportunities in the region. The activities of the Centres for Frugal Innovation in Africa and Global Heritage and Development fit in well here. A proposal for a Port City and Regions Futures research programme will be developed. As part of this challenge, the collaboration on Migration and Diversity and on Responsible Innovation will also be expanded. There is a successful LDE master track for Migration and Diversity. We are going to look into the possibilities of forming an LDE centre here. An LDE minor already exists on responsible innovation and TUD has commissioned an exploratory study for the city of The Hague into a research programme 'Responsible Innovation for the SDGs' within which many new LDE universities' projects are possible.



A high-angle, top-down view of three rowers in a boat on dark water. The rowers are positioned vertically, with the person at the top wearing a grey shirt with 'Erasmus' written on it, the middle person wearing a light blue shirt with 'Universiteit Leiden' and a crest, and the person at the bottom wearing a red shirt with 'TU Delft' and a logo. All three are wearing caps and athletic gear. Their oars are visible, dipping into the water. The text '4. What we aim to achieve: education' is overlaid in white on the left side of the image.

4. What we aim to achieve: education

The proximity and location of the three universities offer excellent opportunities for expanding collaboration on education. This collaboration offers students greater freedom of choice, gives them opportunities to collaborate with students from other disciplines and enables new interdisciplinary education that is linked to the social themes with regard to which LDE seeks to play a prominent role.

First and foremost, this requires firm steps with regard to coordinating and harmonising education organisations. We would like to take these steps but are aware of the organisational burden that this will entail. So focus here too is important. In addition, we want to involve students in the development of ideas, by setting up a sounding board group that can make proposals for new LDE collaborations in the field of education.

We have the following ambitions:

1. IMPROVING THE AVAILABILITY AND ACCESSIBILITY OF THE EDUCATION ON OFFER FOR EACH OTHER'S STUDENTS

In recent years, much attention has been paid to opening up the (broadening) minors for each other's students, including making our minor programmes more attractive to students at the partner universities. Currently, a project group is working on the harmonisation of processes and policies. In addition, each university is looking at how its own minor package can be made attractive for the students at the partner university. Steps towards harmonisation will be taken to achieve this, for example by making the scope and schedules of the minor more equal. After the minors, obstacles to educational collaboration in other areas will be removed (organisation, processes, policy, computerisation, settlements).

The opening up of each other's online offer meets a lot fewer physical and organisational stumbling blocks. We will therefore explore how students from the partner universities can participate in the online education offered by the other universities and get ECs for this (virtual exchange).

2. DEVELOPING NEW COLLABORATION ON EDUCATION

Developing new education that is appropriate to the four aforementioned themes is an important part of the strategy. This can best be achieved in a careful growth path: progressing from (converting existing) minors and optional subjects, via (master) tracks to full degree education collaboration at the other extreme of the spectrum with variants such as online learning in between. The LDE Centres have made proposals for this in their new long-term plans. Full joint degree collaboration is an important goal for collaboration in the 'deltas'. But it must regard degrees relevant to the labour market.

Here too, further education collaboration requires the preconditions in the organisation to be better regulated (see 1). In the first years of the next period, we do not want to press too hard on the 'accelerator', but we do, however, want to start exploring new initial programmes. Possible themes are Cyber Security, Energy (transition), BOLD Cities (already LDE minor in development), Circular Economy, and the development of the existing Migration and Diversity master track into a full-fledged master degree.

Ideas for development can also come from outside the centres, for example from the student sounding board group, provided they fit in with the social themes.



3. RESEARCH INTO BLENDED LEARNING

All universities are in a transition to online and blended learning that raises many questions with regard to knowledge. In the coming period, the Centre for Education and Learning will develop into a national centre of expertise on online learning within the 'Digital Society' and apply/validate the acquired knowledge in the teaching practice at the LDE universities and translate the acquired knowledge into professionalising teaching programmes.

4. PROFESSIONALISING TEACHING

A successful collaboration has been achieved with the Leadership in Education Course. In addition to this successful but limited collaboration, new joint components/modules are being set up for starters to senior lecturer. The teaching centres RISBO/ICLON/Teaching and Learning Services are being asked to develop this, for example in the field of online and blended learning (input from the LDE Centre for Education and Learning). In addition, the extent to which it is possible to share knowledge regarding the didactics between lecturers working in the same specialist field is being looked into. At the same time, an inventory is being made of the bottlenecks that impede further cooperation between the teaching centres, e.g. by the various revenue models of ICLON, RISBO and Teaching and Learning Services.

Alongside this, RISBO is being asked to explore with ICLON and Teaching and Learning Services whether the existing EUR training for study advisors can be extended to TU Delft and Leiden.

5. INITIATING SOME LDE STUDENT PROJECTS/CHALLENGES/DREAM TEAMS

We encourage the involvement of students at the hubs of the centres by asking the centres to pay attention to this in their multi-year plans.

We are exploring the possibilities of, in collaboration with the business community or social parties, presenting some challenges for the LDE students, by analogy with the Nuna-Solar team. We ask both the centres and the new student sounding board group for ideas.



5. What we aim to achieve: operational management and HRM

In our collaboration on research and education, we focus on a number of social themes with which we present ourselves to the outside world. In addition, we can also use the proximity of the universities to achieve economies of scale in operational management.

Various collaborations in the field of operational managements have been established in recent years. The current and certainly the future context with increasing scarcity and changing financing methods requires more from the institutions than is currently the case. The three universities have many similar issues in both the inside and outside world in the field of operational management. The expectation is that by further optimising the secondary (support) processes, the (cost) effectiveness, the quality of the support of the jointly undertaken initiatives and the effectiveness of the chosen strategic focus and presentation will all be improved.

The three universities are intensifying collaboration with regard to operational management, limiting themselves in the first instance to the commodities, products and services that are interchangeable (e.g. PCs) or themes that affect us all in the sector (AVG, Cyber security, real estate market). The universities of applied sciences that are located at the LDE campuses can also be involved in this.

Within the Facilities domain, we focus on the following result areas:

- Better insight into real estate market developments in the region for better positioning
- Accelerated increase of housing capacity in the region for employees and students
- Learning from each other's developments in the field of sustainability
- Exchange of tender calendars on commodity products, possibly for volume bundling and efficiency

Within the Information domain, we focus on the following result areas:

- Exchange of knowledge in the field of cyber security/AVG
- Collaboration for fall-back and back-up possibilities
- Knowledge sharing with regard to the IT workplace, management and architecture
- Knowledge sharing for re-selection on functional IT systems (e.g. SAP, HR)

Opportunities for collaboration in the back office/systems of education are being taken up in cooperation with the portfolio holders. The focus will be on visible improvements for services to lecturers and students during the joint programmes.

LDE COLLABORATION IN THE FIELD OF HUMAN RESOURCE MANAGEMENT

In the HRM field we have already established a number of good partnerships, such as the LDE trainee programme, the opening up of training sessions for employees of the partner universities and the Leadership in Education Course. We recently started with the design of a dual career network in collaboration with regional organisations, which should strengthen the recruitment position of the universities by offering job opportunities for scholars' partners. We also want to expand the HRM collaboration.

To this end we will look into whether we can work together in a scientific integrity training session, a joint programme for young academic talent and in setting up an LDE mobility platform. In addition, we see opportunities in areas where we can achieve economies of scale, for example in the joint hiring of reintegration companies and the procurement of services and expertise. We exchange knowledge, for example with regard to social security.



6. How will we achieve these goals?

6.1 ORGANISATION AND COORDINATION

Steering committee and committees on innovation/research, education and operational management

We have chosen for a lighter form of coordination by the steering committee and more involvement of the Deans. The steering committee, with all the Executive Board members, will meet twice per year to discuss the (implementation and realisation of the) LDE strategy, the allocation of funding for new initiatives from the innovation fund, and the interaction with internal and external stakeholders. The steering committee has a rotating chair. The chair will meet in the intervening period with the chairs of the other universities to discuss issues that cannot wait until the next steering committee meeting, or which can be dealt with outside of the steering committee, such as their input for the guidance of external stakeholders in relation to the LDE collaboration (e.g. PZH, EBZ). In addition, we have three committees: innovation/research (rectors), education (board members education), and operational management (board members operational management), which meet whenever necessary with the advisors from the institutions and prepare new proposals and ideas for further collaboration.

Involvement of Deans

The steering committee meetings are immediately followed by a meeting with the Deans to discuss the progress of the LDE alliance. The Deans will be acting as ambassadors for themes and/or sub-themes more than they do now, for example because the steering committee has given them a mandate to focus on Deltas and LDE Centres. The members of the steering committee will stop acting as ambassadors for the Centres, and will discuss on the progress of the initiatives in the meetings of the steering committee and with the Deans. The individual Executive Boards can also hold meetings with the responsible Deans within their universities to discuss the progress of the initiatives. There will be a greater use of 'pioneers'/leading professors for themes (such as DiSA), but there will also be more use of advisory councils and ad hoc focus groups (e.g. with students).

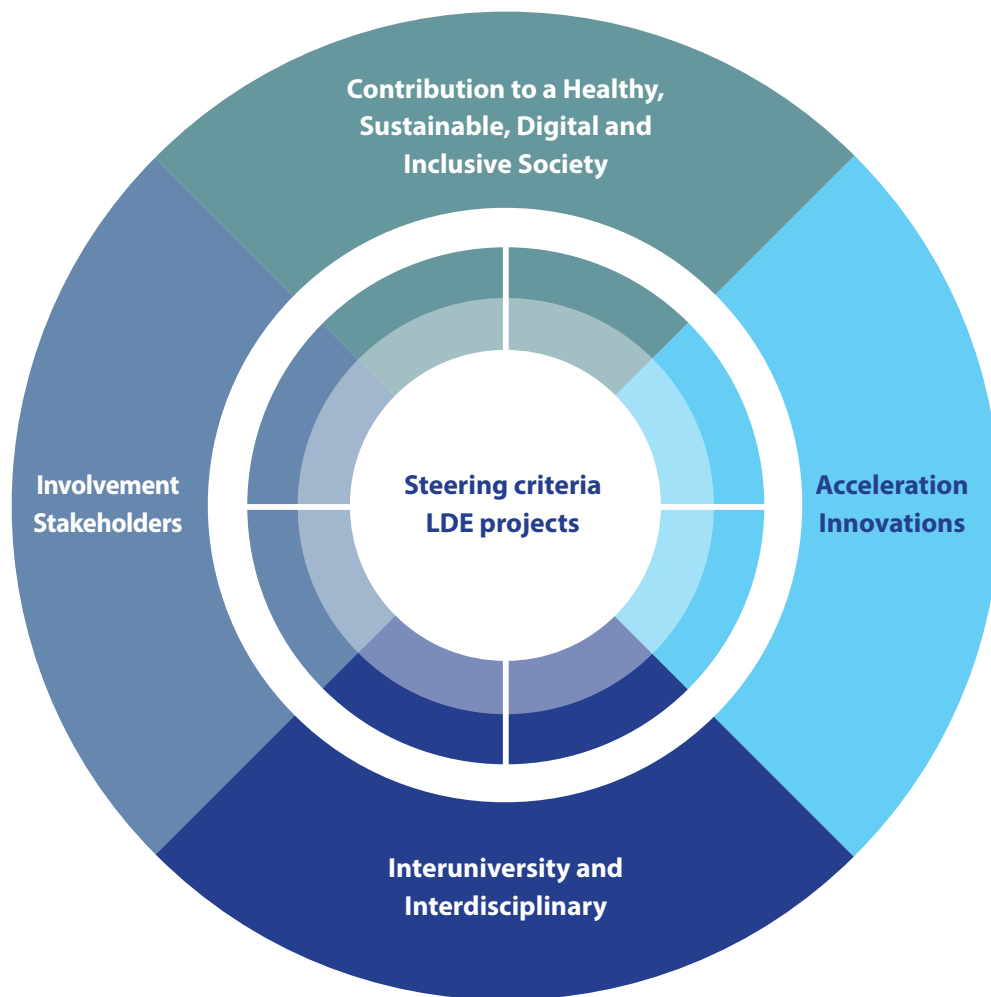
Organisation

These steps will also have implications for the role of the LDE bureau in the second phase. There is a clear need for a recognisable face of the alliance, both internally and externally, in the form of a 'secretary general', who will have final responsibility for the LDE bureau and the preparation of decision-making, but whose main focus will be the expansion of the LDE community and the performance of development/innovation tasks: the recognition and facilitation of new forms of strategic collaboration. To foster community forming and knowledge sharing, an LDE workspace will be set up to provide a physical location where the Centres and the bureau can meet and interact with each other. This will ensure the LDE bureau continues to be an effective, flexible network organisation for the three universities.

6.2 KADER EN INSTRUMENTEN

In this second phase of the alliance, we want to achieve the evolution and consolidation of a number of effective forms of collaboration (e.g. the Centres), lay the foundations for new and ambitious collaborative concepts (e.g. the Deltas), facilitate the launching of new initiatives from the bottom up, and create the necessary preconditions for the harmonisation of organisational aspects (both for education and operational management). There will therefore have to be a mix of top-down and bottom-up initiatives and a mix of instruments.

The basic principle for all initiatives – except the basic preconditions – is that they will be assessed based on the suitability criteria for our mission.



This means we will welcome and encourage a wide range of instruments. In the field of education, this will range from LDE challenges, joint education modules such as 'MOOCs'; via minors to complete joint degrees. In the field of research, this will range from PhD programmes, via the joint appointment of professors, to joint research schools, and in the field of impact it will include, for example, organisational forms of consortia for NWA applications via (new) LDE Centres, to the establishment of fully fledged LDE Deltas. This will mainly involve participation from all three universities, but there will also be room for smaller initiatives between just two of the three universities.

Basic preconditions: collaboration in the organisation of education and operational management

The harmonisation of the organisation of education will need a targeted (top-down) administrative and management approach. First and foremost, the focus will be on the harmonisation of the room for minors, for example in order to find solutions for the uneven size of the minors, so that the number of incoming students can continue to grow. This will then be extended to include other areas of educational collaboration (electives, joint degrees).

For operational management (commodities, HR), the areas that will be targeted for collaboration will be selected based on the following four criteria:

- significant financial impact and/or long-term impact;
- the potential for collective action based on regional proximity;
- the bundling of forces will enhance the influence exerted on other parties;
- the bundling of forces will improve efficiency/quality.

6.3 FINANCE AND BUDGETS

The bureau controls the LDE fund that consists of the following financial instruments:

- 1) growth and consolidation funding for the already existing Centres. This funding will stop at the end of the planning period because we assume the Centres will then have found other sources of income, for example via the participating faculties or through external funding.
- 2) an innovation fund to stimulate new proposals for collaboration.
- 3) funding for the LDE bureau.

6.4 NEXT STEPS 2019

- The multi-year plans of the Centres for Sustainability, Frugal Innovation in Africa, Global Heritage and Development, BOLD Cities, and Education and Learning are drawn up, the budgets are allocated, and then the plans will be carried out;
- In close collaboration with the existing Centre for Sustainability, a plan will be drawn up in the second half of 2019 for the establishment of an LDE Delta for Sustainability during this strategic period. See the caption on p 6 for the main characteristics of an LDE Delta;
- For Digital Society, based on the current LDE collaboration in the national Digital Society programme, further collaboration within the LDE will be explored together with the professors involved;
- Several of the new types of collaboration described above will be further explored and worked out in detail by the professors and organisational units involved over the coming months, including:
 - a research programme for Port City and Regions Futures;
 - an LDE Centre on Governance of Migration & Diversity;
 - an LDE Centre for Space for Science and Society;
 - the collaboration on Responsible Innovation and the SDGs;
 - the collaboration on Safety and Security;
 - the collaboration between the educational centres in the field of amongst other things the professionalization of lecturers;
 - the training for study advisors;
 - the setting up of an online virtual exchange.
- A student focus group has been set up that contributes ideas and suggestions for the education agenda and makes proposals for new education, including a number of LDE student challenges;
- Harmonisation proposals have been developed for processes and policy in relation to minor education, and then for other aspects of the educational collaboration (organisation, processes, policy, ICT, settlements).
- A proposal will be drawn up for joint appointments of professors (LDE).
- Two work conferences were organised that took decisions about the key areas of collaboration in the field of operational management.
- A proposal will be drawn up for physical workstations for the LDE support team and the LDE Centres.

Appendix I - The Leiden - Delft - Erasmus Strategic Alliance 2012-2018: The first phase

THE LDE-CENTRES

The emphasis in recent years has been on setting up Leiden-Delft-Erasmus centres where academics from the three universities can work together on social challenges.

Leiden-Delft-Erasmus centres	Maatschappelijke opgave
Sustainability	Circulaire economie
Safety and Security	Veiligheidsvraagstukken
BOLD Cities	Big data onderzoek voor stedenproblematiek
Metropolis and Mainport	Duurzame ontwikkeling van havens
Global Heritage and Development	Erfgoed voor de toekomst
Education and Learning	Onderwijsinnovatie
Economic and Financial Governance	Europese en globale economische en financiële governance
Frugal Innovation in Africa	Frugal innovatie in Afrika
Medical Delta	Gezondheidsvraagstukken

The centres offer an opportunity to combine complementary academic expertise from the three universities. In the first phase, communities and internal and external networks were set up based around various themes, knowledge was developed and disseminated, research was carried out as part of sometimes externally funded projects and programmes and cooperative ventures were set up with social partners. In addition, various courses were developed and conducted. The centres are an important vehicle for multidisciplinary collaboration between the universities.

Of the eight centres launched in 2012-2013, one - the Centre for Governance - was closed in 2015. The Centre for BOLD Cities was launched in 2016. In May 2018, the centres were evaluated with respect to their contribution to collaboration and valorisation in the areas of research and education. Based on the evaluation, it was decided to continue the Centres for Frugal Innovation in Africa, Sustainability, Global Heritage and Development, Education and Learning and BOLD Cities (mid-term review).

All these centres have contributed to strengthening the collaboration between the LDE universities and the positioning of research, education and valorisation. Moreover, they have potential to develop further in this respect. These centres focus on themes that have high social relevance. The previously formed Medical Delta collaboration went from strength to strength during this period, partly due to the introduction of new, jointly organised degree programmes and a successfully acquired partnership status with the European Institute of Technology Health.

PARTNERSHIP WITH CIVIL SOCIETY

In 2018, Professor John Goddard, expert in the field of the 'civic university', visited the universities and interviewed administrators and stakeholders at the centres. His conclusion was that the centres are an optimal tool for partnership and for connecting the universities with society at large. He advised that the successful centres should be further developed and given a more robust, joint organisational basis. "The LDE Alliance is a globally distinctive and pioneering initiative in many respects. It brings together researchers from different disciplines and from different institutions in the same region. It supports the sharing of teaching across the institutions in the prioritized areas. Above all it ensures that the shared work is undertaken in partnership with civil society, exhibiting many features of the civic university model which is gaining ground around the world not least in the Netherlands where the Government has launched support for 'City Deals' linking universities and municipalities. "

LDE: PARTNERSHIP IN EDUCATION

Partnership in education has also been an important priority during the first phase, partly at the request of students in the representative bodies. Taken together, the universities cover virtually all academic disciplines and the proximity of the three university cities makes it easy for students to attend these programmes. Joint Bachelor's and Master's degree programmes, and Master's tracks, minors, honours classes and MOOCs have been introduced. Since 2012, the three universities have expanded their offer of jointly organised courses with the following new programmes: the Bachelor's and Master's degrees in Nanobiology (TU Delft-EUR), the Bachelor's degree in Clinical Technology (LUMC, TU Delft, Erasmus MC), and the Master's degree in Technical Medicine (LUMC, TU Delft, Erasmus MC). In addition, efforts have been made to broaden the range of LDE minors: these are broad-based, multidisciplinary minors focused on social issues, taught by lecturers from all three universities and open to students from the three universities.

Life Science and Health

- Bachelor Life Science and Technology (L,D)
- Bachelor Molecular Science and Technology (L,D)
- LDE-Bachelor Klinische Technologie
- LDE-Master Technical Medicine
- Bachelor Nanobiologie (D,E)
- Master Nanobiology (D,E)
- LDE minor Geneeskunde voor technische studenten

Science and Technology

- Masterspecialisatie Astronomy and Instrumentation (L,D)
- Masterspecialisatie Bioinformatics (L,D)

Safety and Security

- LDE minor Safety, Security and Justice
- LDE honours class Cyber Security
- LDE MOOC Risk in Risk-Averse Societies
- Executive master Cyber Security (D,L)

Circular Economy

- Master Industrial Ecology (L,D)
- LDE minor Geo-resources for the future
- LDE MOOC The Circular economy
- LDE MOOC Wheels of metal
- LDE summer course Sustainability into Practice

Sustainable Mobility and Logistics

- Executive master Customs and Supply Chain Compliance (D,E)

Inclusive society

- LDE mastertrack Governance of Migration and Diversity
- LDE honours class InnovationLab
- LDE minor Responsible Innovation
- LDE minor Frugal Innovation for Sustainable Global Development
- LDE minor African Dynamics
- LDE MOOC Heritage under Threat
- LDE Honours class Living (World) Heritage Cities

The overview above shows that the degree programmes which are organised in a perfectly collaborative way mainly relate to themes such as Life Sciences and Health around which there was already long-standing cooperation, usually between two out of the three universities. Current forms of cooperation on more recent themes between the three universities are usually smaller in scale.

The joint courses are interdisciplinary or multidisciplinary in nature and focus on socially relevant themes. In addition, from 2015 onwards, the existing offer of broad-based minors at each university is open to students from all three universities. In this way, students learn to work together in multidisciplinary teams. This is how LDE courses contribute to comprehensive, broad-based education for students and help find solutions for social challenges.

The result - 1874 students on joint degree programmes in the 2017-2018 academic year and 293 students participating in each other's minors in 2018 - may not seem substantial in terms of the total number of students, but can justifiably be regarded as a good result: there is a clear demand for LDE courses.

Students, deans and Executive Board members are enthusiastic about the educational partnership. In addition, educational partnership leads to sustainable collaboration between the LDE partners. But this also places high demands on the respective programme organisation and administrative bodies. Recently, a lot of attention has been focused on the harmonisation of processes and policy, in particular with regard to cooperation in the area of minors.

LDE: ACADEMIC COOPERATION

As an important part of the collaboration, co-publications are usually issued by two, and sometimes all three, LDE universities. An analysis of the 2007-2016 period - a large part of which falls within the duration of the current LDE strategy - shows that, even though academics from the universities are increasingly publishing articles together with authors from abroad, the share of LDE co-publications is also substantial and growing. This is also true within the list of the top 10 academic publications with the greatest impact. There is a notable increase in the number of research publications, multidisciplinary and otherwise, published jointly with TU Delft. Erasmus University Rotterdam and Leiden University are currently ranked second and third among TU Delft's cooperation partners in the Netherlands. The majority of publications produced by the collaboration relate to Life Sciences and Health, but there is also a remarkable increase in the number of co-publications between Erasmus, Leiden and TU Delft in the field of Computer Science.

Most European-funded research projects at the individual universities have ERC grants and the number of cooperation projects in the field of Societal Challenges is still limited. The centres (with the exception of Medical Delta) have had limited success in the EU, with circular economy being the most successful theme. The LDE application to the Skłodowska-Curie COFUND Programme has, however, been successful. As a result, the three universities, along with the two medical centres, received a grant of 6.3 million euros for a postdoctoral fellowship programme. This 'LEaDing Fellows Postdoc Programme' offers 90 researchers, who have recently obtained a PhD, the opportunity to gain two years of work experience in a challenging, internationally attractive work environment. The National Research Agenda (NWA) also offers new opportunities for multidisciplinary cooperation between the LDE universities, these have already been made use of by LDE centres in some cases (see Chapter 2).

The analyses show that academic cooperation has been achieved organically from the bottom up and that the creation of joint publications and successful funding applications at the centres takes time, such as in the case of Medical Delta. A partnership between top universities does not automatically lead to a position among the world's leading universities and the question is whether it is productive to focus on this as a goal.

LDE: COOPERATION IN OPERATIONAL MANAGEMENT/HRM

The priority of the LDE Alliance is to encourage cooperation in primary processes. Efforts though are also made to cooperate in the area of operational management, by coordinating activities, sharing knowledge and skills and trying to jointly achieve advantages of scale. Examples of co-operation:

- Making a large number of the programmes and training courses at the three universities accessible to employees from the three universities
- LDE Academic Leadership master class
- LDE traineeship
- Dual Career Network
- Didactic Leadership Course

Knowledge is being shared on a large scale, organised both at a central and individual level. This process of knowledge-sharing occurs not only between two or more of the institutions involved, but also outside the partnership at national level via the Association of Universities in the Netherlands (VSNU) and SURF.

Appendix II - The Strategic Alliance Leiden - Delft - Erasmus in Society

International, national and regional developments form an important incentive for cooperation. The international competition to attract talent and funding, focus on social applications and regional clustering around economic themes are determining factors. These developments have been further reinforced in recent years and are expressed in various social agendas set up since the start of LDE.

INTERNATIONAL AGENDAS

• Sustainable Development Goals (UN)

The 17 global Sustainable Development Goals are being increasingly adopted by more and more companies and knowledge institutions worldwide as part of their strategy. Dutch universities are also increasingly focusing on the SDGs (see: https://www.vsnul.nl_NL/duurzame-ontwikkelingsdoelen.html). The LDE centres touch on a wide range of SDGs, where the most interfaces can be seen in the areas of Good Health and Well-being, Industry, Innovation and Infrastructure and Sustainable Cities and Communities.

• European research funds: H2020 (EU) and Horizon Europe

H2020 (KP8) focuses on seven Societal Challenges and aims to develop solutions for the social issues faced by Europe today. The successor 'Horizon Europe' will be launched after 2020. This will have a budget of 100 billion euros and be linked to the UN SDGs. The largest budget is reserved for the Challenges and Industrial Competitiveness pillar, covering the themes of Health, Inclusive and Secure Society, Digital and Industry, Climate, Energy and Mobility and Food and Natural Resources. The aim is to achieve a 'mission-driven' collaboration between partners, focused on joint ambitions in relation to the challenges.

NATIONAL AGENDAS

• National Research Agenda (NWA - knowledge coalition) and Top Sectors

The NWA brings together specific research issues, around which new consortia are created which are made up of researchers from different disciplines as well as from different knowledge institutions, ministries, the business world and social organisations. The new government has made an investment of up to 130 million euros for additional NWA research. The first call for applications for up to 10 million euros is currently underway, and various LDE-Alliance researchers are working together to develop proposals. The Top Sector policy (introduced in 2012 and currently focused on nine top sectors) is shifting towards the NWA approach which focuses on social issues.

• VSNU Digital Society

To be better prepared for the NWA, the VSNU has organised a joint input on Digital Society in an agenda consisting of seven themes. At the start of 2018, LDE decided to set the tone within this agenda by further increasing the efforts to develop its own Digital Society programme. No fewer than five of the agenda's seven themes are aligned with the themes of the LDE Alliance and, for four of these themes, researchers from the three universities play a leading role in nationwide research (Health and Well-Being, Responsible Data Science, Digital Cities and Communities and Learning and Education).

REGIONAL AGENDAS

In our region (Zuid Holland), the Metropolitan region Rotterdam The Hague (MRDH) and the Economic Board Zuid-Holland (EBZ) are playing an increasingly important role in creating networks and support for the strategic issues involved in strengthening the economic structure of the region, with the Innovation Quarter acting as development organisation. These efforts are guided by the Roadmap Next Economy (RNE). This Roadmap covers themes such as the energy transition, digitisation, circular economy and Next Education.

The themes of these diverse regional roadmaps and agendas (of the province, Innovation Quarter, EBZ and MRDH) fit in well with one another and share a long-term orientation. In addition, various Triple Helix organisations around the major themes have emerged in the region (SmartPort, GreenPort, Clean Tech Delta, The Hague Security Delta and, of course, Medical Delta), with which the LDE universities are jointly or individually associated.

Colophon

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June 2019

Design and Lay-out: Dimardesign BNO, Dimitri Mau-Asam

Strategy for the Leiden-Delft-Erasmus Alliance 2019-2024

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