

Dear partners of Leiden-Delft-Erasmus,

Tim van der Hagen just indicated how LDE came about and where we stand, and just as he did in his commemoration oration, he has indicated why we must tear down the walls – both physical and imaginary – between the disciplines and forge new alliances to tackle our key social challenges.

The entire university community has to engage in this endeavour, from professors to employees, students and support staff. That is why it is so important for employee participation to play a role in this process at LDE. I, for one, like working with employee representatives, and enjoyed doing so for nine years as dean, in the knowledge and with the experience that all layers of the university community converge in the employee participation bodies and that a dialogue takes place with representatives from all of these layers. And as far as I am concerned that dialogue is not without obligations. Because what we need to do is too important.

Let us briefly jog our memories again: in 2100, the world population will peak at 10.9 billion – that is 3.2 billion more people than there are now, about 4 times the entire population of Europe. All of these people are going to consume, use energy, live in massive mega-cities and sometimes migrate to other places on the planet. If we just consider what the impact will be on the world if these people go about their business as we do today, then we know it is going to end badly.

We can also project the problem to our region. The Dutch Central Bureau of Statistics predicts that the Dutch population will continue to increase, reaching almost 19.6 million inhabitants by 2060. An important percentage of this growth will be the result of migration. In 2040, there will be twice the number of people over the age of 80 than there are today. Essentially, the region of South Holland is facing the same challenges as the world: we have to ensure that our cities remain liveable; our society has to remain inclusive; the economy has to become circular; energy has to be generated and delivered without carbon emissions; we have to adapt to climate change; and related to all of that, we have to give new technologies their place in society. Scientific breakthroughs are necessary to achieve all of these goals. Working on this is not a luxury, but an absolute necessity. Our key social issues are urgent! That is why we have joined forces in LDE.

Luckily the world around us has also been persuaded of the urgency of these key social issues. They are reflected in the Roadmap Next Economy, the long-term vision for shaping the new economy of the South Holland region; in the knowledge and innovation contract (KIC) for the years 2020-2023, which will be driven not only by public-private partnerships but also cooperation between the arts and humanities, the social sciences and the natural sciences; in the Dutch Science Agenda (NWA); and in the second pillar of Horizon Europe. Incidentally, for the European Commission, the direction will be dictated by the keywords 'people, planet & prosperity'.

What can Leiden University, the Delft University of Technology and Erasmus University signify in these agendas in terms of both education and research?

Part of the answer, of course, is already embedded in the LDE strategy, which has identified four clusters: Healthy, Inclusive, Digital and Sustainable Society. We already have our exceptional centres. And the Medical Delta. But given the urgent agenda I just mentioned, we must further enhance our partnership. Essentially, it is always going to be about People, Planet and Prosperity.

Healthy Society

That is also reflected in the main theme of Healthy Society. Of course, Medical Delta has been operating with great success at LDE for years, and recently Erasmus University and TU Delft announced, through Tim van der Hagen's commemoration oration in Delft, the *convergence* of their activities in the area of Technology and Medicine, among others. All this has made it clear that we need a transition in healthcare, and that technology on its own will not suffice. Prevention and participation are equally important. And then, in addition to the Life Sciences and Technology, the social sciences, law and the humanities come into play as well. How can we reduce the burden of disease caused by unhealthy lifestyles or increase the percentage of people with a chronic disease who can participate in society? It is precisely in South Holland and with the right expertise at LDE that these challenges can be addressed. And let us not forget the Medical Humanities. Our aim here is to make significant strides forward in the near future.

Digital Society

In the context of Healthy Society, digital solutions and innovations are bound to be a topic of discussion. That is the safest statement I am going to make today. Indeed, the digital transformation is important in everything that we do. It cuts across all fields and every issue. Nevertheless, LDE identifies 'Digital Society' as a separate theme – and rightly so, of course – because if anything lends itself to an interdisciplinary approach, then that does.

Of course, we already have BOLD Cities. One of the issues this centre focuses on is citizen participation in a digital era. And the LDE initiative on Artificial Intelligence has been announced. Leiden, Delft and Erasmus University are thus fully aligned with the Netherlands' national AI strategy. And people are the key focus here as well. Indeed, the national strategy advocates that a key priority in the development of AI systems must be the effective cooperation between people and AI systems, rather than replacing people by AI systems. It is this vision, shared in Europe, that makes interdisciplinary cooperation so crucial. We want the region of South Holland to take the lead in creating AI components and AI systems, but also in enabling AI systems and people to work together and ensuring that society uses AI systems responsibly. It concerns Human-Centred Artificial Intelligence – in other words, it is ultimately about People and Prosperity – and all disciplines are necessary, from computer science to law, linguistics, ethics and philosophy, economics, design and the life sciences and health.

The aim is to set up 30 AI Labs: research units dedicated to a specific AI subject.

Sustainable Society

AI will certainly help to make our society more sustainable. Here too, the themes are intertwined. Sustainable Society is the third major LDE theme. There are even plans to create a Sustainable Delta in the region. I still have to discover exactly what a 'Delta' is, but here it is about the aspiration, which is as bold as the challenge is urgent.

So luckily we already have a Center for Sustainability! Lately, it has focused mainly on the Circular Economy. And there is ACCEZ, the knowledge programme of the province of South Holland, its industry and universities to accelerate the transition to a circular economy.

A variety of subjects are interlinked when it comes to 'Sustainability', but perhaps it is not a bad idea to mention the specific opportunities for LDE.

If, for the sake of convenience, we restrict the Circular Economy to the reuse of resources and raw materials (I am aware that this is putting it in far too simple terms), then I can mention the Energy Transition as a separate theme. It is a theme that the Port of Rotterdam, the horticulture sector and other parties are actively working on. It would be a misconception to think that the necessary technology already exists and that is only a question of 'rolling out' this technology. Fundamental research is required, but then preferably in a knowledge chain where applied and practical research have a place.

That applies to a third subject as well: climate adaptation – which is such a broad theme that scientists will have to sharpen their focus. An extensive knowledge chain is important here too, as well as co-creation. Regarding the latter, think of the Global Center on Adaptation in Rotterdam. It does make sense to identify 'Climate' separately from the Circular Economy and the Energy Transition. The European Commission, for example, has announced that 35% of the total budget of Horizon Europe will go to climate-related research. As for 'Climate' in the context of LDE, 'Urbanized Deltas' immediately come to mind. After all, South Holland is part of an 'Urbanized Delta', and with a changing climate and rising sea levels, we will have to come up with new solutions to problems, in which *building with nature* will undoubtedly play a role, as well as earth observation to monitor the coast – and of course Space is also part of a Sustainable Society.

You may have noticed that 'Urbanized Deltas' is plural! Every local or regional issue is also a global issue, and the knowledge acquired in the context of LDE will find its way onto the global stage.

Inclusive Society

As far as I am concerned, the latter also applies to the last major LDE theme: Inclusive Society. Let us not forget that in addition to being the administrative centre of the country, The Hague is also the second or third UN city in the world. An agenda for an inclusive society therefore automatically has a local and regional, as well as a global, dimension. In the coming months, we will have to jointly discover how exactly we envision this. Of course, it concerns urban issues such as migration, integration, transport, housing and prosperity, an agenda for South Holland that is impossible to establish without the municipal and provincial authorities. Perhaps it would be a good idea in this context to also involve security issues –

and therefore speak of 'Inclusive and Secure Societies' from now on. And then the digital world immediately rears its head again.

Partnerships & Triple Helix

As you can see, the themes constantly intersect each other. Which is fine, because we do not want to force things into a straitjacket. It is also clear that each theme has natural partners outside the universities and medical centres. Municipalities, the Port of Rotterdam and the Province are the ones that inform us about what is needed to maintain a prosperous and liveable region. Indeed, they will actively participate in developing scientific queries – co-creation is the keyword here. But that applies equally to industry, from the high-tech horticulture sector in Westland to Airbus in Leiden. Public-private partnerships in research, such as those facilitated by the mission-driven innovation policy of the State, will be further encouraged. Obviously there is no need to tell you, but just in case: LDE also contributes to the economy and prosperity, for innovations in many areas. Research attracts economic activity. High-quality education creates a good business climate. Knowledge hubs in cities are considered important precisely because of the partnerships between knowledge institutions, cities and businesses, which creates a fertile knowledge ecosystem and gives rise to new start-ups. LDE is essentially the nucleus of a major knowledge hub called South Holland, where businesses, public authorities and knowledge institutions – universities and universities of applied science – know how to link up.

So, what next?

We buckle down. What we need to do is connect people and create new momentum: in the end, it is the scientists who matter, and they are the ones that are going to have to make it happen, who have to want to make it happen. Carel Stolker touched on this in his commemoration speech. But of course you can entice people. Entice scientists, as a group or with civil society partners, to go to the Lorentz Center to design a field lab, for example, develop a concrete interdisciplinary LDE agenda or prepare an extremely concrete research proposal for an NWO programme or Horizon Europe. We would be happy to encourage and facilitate such efforts.

Education

The themes must also be given a place in educational programmes, and some already have, of course. The alliance will also give education a boost: we are planning a large-scale educational programme in South Holland that could potentially reach a total of 85,000 students in all academic areas, in order to strengthen their knowledge and skills in the areas of AI, Data and Digitisation.

But at the least we will need minors (BA), perhaps even an entirely new programme, but the most important thing is for students to be exposed to other, relevant disciplines during their studies. Moreover, we will develop MA tracks and in particular also Graduate Programmes for PhD students. It is important here too that PhD students are exposed to other disciplines within their themes. An appealing proposition will also attract the best MA and PhD students. Here too, it concerns a concrete LDE agenda.

And of course we must not forget our Centre for Education and Learning, which helps us with educational innovations and technology. And that dovetails nicely with our Digital agenda.

Internationalisation

All of this also implies an LDE internationalisation strategy, which must contain two elements: (a) a partnership with the best hot spots in the above-mentioned themes in Europe (for promising Horizon Europe applications) and elsewhere (exchanges, cooperation) and (b) recruiting the best talent worldwide and, as LDE, also making agreements with foreign research funders for that purpose. As many as 90 international post-docs from all over the world are already working at LDE. We appropriately call them: LEaDing fellows.

Ambitious?

Is this an ambitious agenda? It most certainly is! Will everything be achieved within a few years? Probably not! But it is not an optional agenda, because the challenges and problems we face are urgent. And that is why we are doing it! With all of you! To conclude:

Leiden - Delft - Erasmus: research, scholarship and education for People, Planet and Prosperity!

Thank you for your attention.

