

Termo de entendimento entre Curitiba, instituições brasileiras e holandesas para aumentar o potencial de ciclomobilidade rumo a uma Smart Curitiba

**MoU among the City of Curitiba, Brazilian and Dutch Institutions
to increase the potential for cycling towards a Smart Curitiba**



Working plan



The partners to this MoU

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1. Introduction

On 18 September 2015, 14 Dutch and Brazilian parties have signed a Memorandum of Understanding (MoU) on the promotion of cycling – and mobility and urban development at large – in the city of Curitiba. The MoU marks that start of a five-year collaboration consisting of exchange of knowledge and people and joint research projects.

The main purpose of the cooperation envisaged in the MoU between the parties is to *enable the full utilization of the respective comparative advantages and capacities of each of the parties to increase the potential for cycle mobility towards a Smarter Curitiba, and more specifically to ensure coordination of efforts across country borders to build joint innovative projects using PPP and urban planning and design as tools for the construction of a smart Curitiba.*

The MoU is the outcome of two earlier Dutch missions to Curitiba. In June 2014, a first Dutch trade mission to Brazil was organized lead by the Dutch director general Mr Berthold Leeftink of the Ministry of Economic Affairs visiting business associations, governments and knowledge institutes in São Paulo, Rio de Janeiro and Curitiba. After the mission, it was decided to explore possibilities for project development on Smart Cities in the city of Curitiba. This was done in a second mission in May 2015 representing the Wageningen University (Natasha de Sena) and the University of Twente (Maya van den Berg). In September 2015, a delegation from the University of Twente (Sjoerd van Tongeren and Maya van den Berg) paid a work visit to Curitiba to sign the MoU and to prepare the accompanying working plan with the Brazilian partners.

2. Possibilities for connections

2.1 Focus areas

The collaboration focuses on building joint innovative projects for the realization of a smart Curitiba. We will be collaborating on issues relating to cycle mobility, urban design and sustainability using a Triple Helix approach. The Triple Helix format implies collective (research) projects including both public and private sector as well as knowledge institutes/universities. The MoU marks that start of a five-year collaboration consisting of exchange of knowledge and people and joint research projects. The Dutch partners will be working from their office at the IPPUC institute.

The collaboration further focuses on knowledge exchange. This consists of the exchange of people (professionals, researchers, students, interns), collaborative research projects and professional and academic publications. In addition, there is a line that focuses on concrete implementation trajectories that could include business development, consultancy/advisory and corporate collaboration.

During the meeting in September 2015, the University of Twente (Sjoerd van Tongeren and Maya van den Berg) visited Curitiba for signing the MoU and to prepare its implementation. From a living lab experience in that week, we have defined a number of common themes and interests:

- Integrated mobility
- Sensitive cities (e.g. sensors, big data)
- Collaborative design strategies
- Cities for people/ Liveability of public space (e.g. Inclusive Cities)
- Cycling mobility
- Mobility safety
- Mobility policies
- Environmental impact of sustainable mobility

2.2 Academic connections

The Curitiba universities (UFPR, UTFPR, PUC, UP) have an interdisciplinary lab where researchers from various backgrounds collaborate in tackling urban challenges (UFPR: the Ciclovida Office, UTFPR: the Green Office, PUCPR: the Innovation Lab). These are perfect entry points for our researchers.

Another observation is that the MoU has a strong focus on mobility and urban design and specifically to improve the cycle mobility in the city. However, the general frame in the collaboration is to reach towards a liveable Curitiba in the future as we also talked about sustainable energy and water management. These are issues we are also working at in the Dutch institutions.

Relevant on-going projects by Curitiba academia are:

- Incentive to students to use more bicycles
- Design for social innovation at UFPR
- Air pollution
- Electro-mobility
- Road safety
- Connecting UTFPR campi
- Co-benefits in the transportation system
- Alive parking space (vaga viva)
- Design policies
- Design collaboration
- Development across the structural axis
- Ciclovida
- Parking places in the city centre and beyond
- Design for sharing

- History of Curitiba's mobility
- History of urban planning in Curitiba
- Institutional mobility program (PUCPR)
- Bike at school (PUCPR)
- Liveable surrounding mobility
- University engagement
- Mobpuc

2.3 Other possibilities for connections

Relevant on-going projects by the Curitiba Municipal Government are:

- Parklets
- Multimodal mobility
- Bikes in schools
- PlanCal (sidewalks plan)
- PlanCiclo (Bike Plan)
- Bike sharing
- Cyclist protection program
- Inclusão + Bici (Inclusion + bikes)

Relevant on-going projects by CicloIguaçu are:

- Partnership with institutions for mobility projects
- Claim for policies
- Knowledge for the public protocols of the city
- Interface between cyclists and institutions
- Legal assistance for cyclists
- Bike to work and San Fran Ciclo motivation programs

3. Implementation

In implementing the MoU, we can discern three lines that are briefly explained below.

3.1 Research programme

The first line focuses on joint research projects by both Curitiba and Dutch universities - and perhaps other institutions as well. This requires the tracing of relevant calls and writing proposals. It aims at gathering findings for joint research and the delivery of joint publications.

3.2 Exchange programme

The second line focuses on the realisation of exchange programmes so we can send students over for education, internships or BSc/MSc assignments. The universities will set up exchange programmes between their institutions so students from both sides can study at either Curitiba or one of the Dutch universities. The exchange programme also includes internships. Interns can also be placed at the non-university partners. A first internship for two Dutch students at IPPUC is already described (see Annex 3).

Possibilities for exchanging students are the following (descriptions of the other universities will follow; see also Annex 3):

UTFPR Tatiana Gadda can co-supervise a master student enrolled in a Dutch University and accepts students for internships. She is just now co-supervising a master student from Sweden and has 3 interns (2 from Finland and 1 from Germany). Her capacity however is 3 students per semester.

Thais Martins can also accept BSc students for internships.

Next semester we are probably going to need students to produce maps and graphic material for these researches on mobility.

PUCPR We have an undergraduate English Semester Program that offers many courses of the different Schools of PUCPR (Architecture and Design, Business, Law, Polytechnic (Engineer courses)). We are receiving students from many countries (Mexico, Germany, Canada, Spain, Italy, Finland, etc.) in courses as Current Trends in Urban Design, Urban Acupuncture, Integrated Urban Design, Environmental Studies, and others. In our graduation program in Urban Management - PPGTU - we have many partnerships also.

André Turbay is the supervisor for under graduation and graduation exchanges at the School of Architecture and Design

UT <https://www.utwente.nl/en/education/international-students/exchange-students/exchange-programmes>

3.3 Business development

The third line on business development goes hand in hand with the development of research projects and our presence at the IPPUC institute. To explore our possibilities in this area, the Dutch partners will be developing a proposal for the *Dutch Partners in International Business* (PIB) programme. The initiative is with the University of Twente coordinating the Dutch activities.

3.4 Looking ahead

Next steps towards filling in the cooperation both have a short and long term focus. At the short term, we aim to develop a *pilot project*. The Brazilian partners could evaluate the aforementioned possible research proposals, and select which one would be the most urgent and interesting, and also a theme that is possible to be financed by a third party (the Triple Helix construction).

Short term pilot projects to start working on are could be:

- Bike sharing project (lead: URBS)
- Micro bicycle network in the Industrial District (lead: IPPUC).¹
- History of cycling including Curitiba (lead: UT)

For the longer term, we develop a joint research program. The other themes and topics will be taken further in the large scale planning for the development of the framework of the research program (5 year term). Several ideas for longer term projects to develop have been mentioned by several of us. First we will list the ideas that came out of the living lab experience:

- Strategies for developing (apps for) a city for people
- A study on intercampus mobility (UFPR, UTFPR, PUC, UP)
- Urban kindness - bottom-up initiatives (“Gentileza Urbana”)
- A Square Contest that calls students to redesign unused areas; the prize would be a place in a student exchange program.

In addition, future cooperation could also be on the following topics:

- Introducing bikes in the bus (lead: IPPUC)
- Bike to work & school/connecting parks and campuses (lead: Curitiba universities)
- Sharing ideas and projects on urban innovation in Curitiba/Brazil and the Netherlands/ Europe: (online) book of ideas
- We could further go into the datasets that are available (traffic, energy)

The latest idea for (pilot) project was suggested by André Turbay for the Second Researchers meeting taking place in Curitiba on 23 October 2015:

I would like to suggest for the group to work with the transformation of the mobility and the dynamics of the ancient industrial areas – Cidade Industrial de Curitiba / Linha Verde (Ancient highway that is in urbanization process from industrial to housing and services) / Rebouças (first industrial area of Curitiba that’s needs a remodeling, connected to Area Calma). We have the possibility to connect all Universities in this triangulation, and the chance to develop a master plan of Curitiba’s cyclemobility.

¹ **Note:** a private company that won the tendering procedure is currently carrying out this project. It is unclear to what extent it allows involving other (non-Brazilian) partners.

4. Timeline

- Oct-Dec 2015
- Preparing our first pilot project
 - Preparing student/staff exchange; identifying students and staff that are willing to go on exchange, both from the Netherlands to Curitiba and vice versa; preparing exchange programme among the universities
 - Preparing a Dutch PIB application
 - Looking for funding possibilities for the meeting in March 2016
-

- Dec 2016-Feb 2016
- BR: Summer break in Curitiba – institutional activities keep working
 - NL: finalising exchange programme and PIB
-

- Early 2016
- We want to have at least one project running that unites at least two parties from both countries
 - We want to have one student from each of the 6 universities involved being send to the other country
-

- March 2016
- We have a conference meeting with all partners being present (format: Conference - *related to the Smart City Business conference?*)
 - The first students are being exchanged
 - Our first pilot project takes place
 - Evaluation & look ahead
-

- September 2016
- *Partner meeting in Netherlands?*
-

5. Budget

We have agreed that each of the partners cares for its own funding. We will also try to generate additional funding opportunities through strategic networking.

In addition to this, we will all be looking for additional funding opportunities. Funding could cover at least one of the lines we discerned above (e.g. research, exchange or business development). Some examples to look into are the following:

Funding for research collaboration:

- Calls from national research funding agencies: NWO (Netherlands), Fundação Araucaria (Paraná)
- Calls from H2020; there is an interesting call opening on sustainable urbanism (closing on March 10, 2016)

Funding for exchange students:

- [Orange Tulip Scholarship Brazil](#) (Dutch)
- Science without borders (Brazil); now closed. *We should be looking for alternatives*

Funding for visiting scholars:

- National research funding agencies through NWO (Netherlands) and Fundação Araucaria (Paraná)

6. Action points

Action point	Responsible	Deadline
1. Equip the working platform (http://www.utwente.nl/Curitiba)	UT	1 December 2015
2. Exploring H2020 call on sustainable urbanism (closing on March 10, 2016)	UT, WUR	1 December 2015 – and beyond
3. Exploring funding possibilities for meeting in March 2016	Dutch consulate	1 December 2015 – if possible
4. Preparing exchange program: 1) exchange of agreement format, 2) define study programmes and possible assignments for the exchange students and 5. 3) signing of the agreement	All universities	Preparations before December 2015
6. Exploring relevant calls from NWO/ Fundação Araucaria	All universities	Ongoing
7. Choice of a pilot project	Curitiba partners	1 December 2015
8. Developing pilot project plan (incl. management, role description of partners incl. Dutch, timeline, budget)	(Selection of) Curitiba partners – <i>see page 8</i>	February 2016
9. PIB-application	UT/Dutch partners	February 2016

ANNEX 1: Relevant websites and press attention

Relevant websites

- <http://www.curitiba.pr.gov.br/maisbici>
- <http://www.utwente.nl/smartcities>
- <http://www.ciclovida.ufpr.br>
- <http://www.cicloiguacu.org.br> (in Portuguese)
- Blog on cycling mobility: <http://transportehumano.cidri.com.br> (some in English)

Press and social media

- <http://www.aen.pr.gov.br/modules/noticias/article.php?storyid=85868&tit=Parana-recebe-embaiador-da-Holanda-e-fortalece-lacos-com-o-pais>
- <http://www.cicloativismo.com/2015/09/22/pedal-com-o-embaiador-da-holanda-han-peters/>
- <http://www.gazetadopovo.com.br/haus/estilo-cultura/curitiba-vai-trabalhar-com-a-holanda-para-promover-projetos-de-ciclomobilidade/>
- <http://cbncuritiba.com/2015/09/18/prefeitura-de-curitiba-e-holanda-firmam-acordo-para-buscar-solucoes-em-ciclomobilidade/>
- <http://www.parana-online.com.br/editoria/cidades/news/906439/?noticia=O+QUE+CURITIBA+E+HOLANDA+TEM+A+VER+CONFIRA+AQUI>
- <http://www1.folha.uol.com.br/cotidiano/2015/09/1684977-e-preciso-adaptacao-para-conter-mortes-de-ciclistas-diz-especialista-holandes.shtml?cmpid=compfb>
- <http://www.acpr.com.br/site/2015/09/comitiva-holandesa-visita-acp/>
- <http://www.curitiba.pr.gov.br/noticias/curitiba-e-holanda-vao-trabalhar-juntas-em-projetos-de-ciclomobilidade-para-a-cidade/37601>
- <https://www.facebook.com/PrefsCuritiba/videos/954464444597360>
- [“Curitiba is the best place to experiment”](#) (in Dutch)

ANNEX 2: Partners and their contact persons

The Curitiba partners:

- City of Curitiba: SETRAN – Jorge Gomes de Oliveita Brand (Goura); Luiza Simonelli is the Curitiba-Holland cooperation manager
- City of Curitiba: IPPUC – Danilo Herek, Daniele Coutinho Moraes
- City of Curitiba: URBS – Pedro Romanel
- UFPR – Ken Fonseca
- UTFPR – Thais Saboia Martins, Eloy Casagrande
- PUCPR – Carlos Hardt, Frederick van Amstel, André Turbay
- IP – Renata Akiyama
- FIEP – Rafael Cesar
- IBQP – Roberto Marcelino, Fernanda Chiesse
- CICLOIGUAÇU – Luis Patricio, Yasmim Reck

The Dutch partners:

- University of Twente – Maya van den Berg
- Wageningen University and Research – Natasha de Sena
- CAH Vilentum University of Applied Sciences – Wil Bekkering /p.m.
- Ecofys – Wouter Bakker
- Dutch consulate – Robert de Ruijter
- Dutch Cycling Academy – Wolter te Riele

ANNEX 3: Perspectives on the collaboration from various partners

The Curitiba partners:

1. City of Curitiba: SETRAN
2. City of Curitiba: IPPUC
3. UFPR - Universidade Federal do Paraná
4. UTFPR - Technological University of Paraná
5. PUCPR - Pontifical Catholic University of Paraná
6. UP - Universidade Positivo
7. CICLOIGUAÇU - Associação de Ciclistas do Alto Iguaçu

The Dutch partners:

8. University of Twente
9. Wageningen UR – Alterra research institute
10. CAH Vilentum University of applied sciences
11. Ecofys

City of Curitiba: SETRAN



O presente termo de entendimento entre a Prefeitura Municipal de Curitiba e as instituições acadêmicas da Holanda, envolvendo também as principais universidades locais, com o objetivo de garantir a expansão da ciclomobilidade em Curitiba, encontra amplas e relevantes justificativas por parte da Secretaria de Trânsito.

Em primeiro lugar, a inserção da bicicleta como meio de transporte é algo bastante recente nas políticas públicas do município. Por muito tempo a bicicleta foi relegada a um plano secundário e sua importância para o trânsito menosprezada.

A gestão do prefeito Gustavo Fruet busca consolidar esta nova visão. Pela primeira vez foi desenvolvido um Plano Estratégico Cicloviário, criando conexões para acessar à cidade inteira com mais segurança e conforto. A implantação de ciclofaixas, vias calmas e ciclorrotas seguem as diretrizes previstas neste Plano, que prevê igualmente a instalação de paraciclos em locais de demanda e de serviços públicos, bem como bicicletários nos terminais, buscando a integração dos modais. Também foi criada em 2013 a Coordenação de Mobilidade Urbana da SETRAN, que tem como foco a melhoria das condições de acessibilidade e ciclomobilidade.

A bicicleta é um caminho sem volta para todas as cidades. Curitiba não é exceção. Cada vez mais os cidadãos estão buscando na bicicleta uma forma de fugir dos congestionamentos, do stress do trânsito motorizado e também do sedentarismo. A bicicleta é uma política transversal de trânsito, saúde, meio ambiente e segurança.

A Holanda tem mostrado a todo o mundo como a bicicleta pode ter um importante protagonismo no desenvolvimento de cidades sustentáveis e inteligentes - smart cities. É de pleno interesse desta Secretaria que toda *expertise* adquirida pelos holandeses nos últimos quarenta anos possa, de alguma forma, ser compartilhada com nossos técnicos na busca de soluções mais abrangentes para a consolidação de um trânsito mais seguro para ciclistas e pedestres.

No âmbito da engenharia de trânsito a troca de informações, técnicas e soluções é muito relevante para que alcancemos nossos objetivos. O envolvimento e o diálogo com o meio acadêmico, prática já existente em diversas ações da SETRAN, também se mostra bastante salutar na busca de soluções para a problemática do trânsito.

Também reforçamos a importância da troca cultural e da presença dos técnicos e pesquisadores holandeses que estão se dispondo a visitar Curitiba, através deste documento, pelos próximos cinco anos, com o intuito de colaborar na construção de soluções para a bicicleta na cidade.

Outro ponto importante é a adesão de Curitiba ao Programa Vida no Trânsito, da Organização Mundial de Saúde (OMS), iniciado em 2011 e que prevê uma década de ações com o objetivo de reduzir em 50% o número de fatalidades no trânsito. O MOU com a Holanda também se insere neste contexto. Ao consolidarmos um trânsito mais seguro para as bicicletas estamos fortalecendo a noção de cuidado com os

mais frágeis no trânsito, o que vai plenamente de encontro aos compromissos assumidos par Curitiba com o Vida no Trânsito.

City of Curitiba: IPPUC



Justification for the cooperation with the Netherlands

It is notorious the expertise of the Netherlands in the planning and production of projects for cycle mobility. The city of Curitiba has dedicated special attention to the bicycle mobility, advancing in the inclusion of this vehicle as a modality for everyday basis transportation. Therefore, the city has planned and implemented some initiatives that already start to be highlighted regionally and nationally, as the Calm Road, on Sete de Setembro Avenue, and the Cycle Road Portao - PUC. However, due to some goals established by the Government there is still a lot to plan and implement. Therefore, the Dutch experience, in its several aspects, might help the local government to accomplish the goals in a faster way.

A question arises in this moment. Why would IPPUC be the most indicated institution to receive the Dutch technicians from this partnership? The answer seems clear, given the entity's condition as a Research and Urban Planning Agency, and also because the bicycle is considered one of the central priorities for urban mobility by present managers of the city. Moreover, it's important to mention the fact that IPPUC was responsible for the Master Plan's revision, which will soon be followed (depends on the Council's and Mayor's approval of the Master Plan revision) by the development of The Sectorial Plans. One of them will be the Mobility Plan of for the Two Wheels Transportation (the bicycle). Alongside with these aspects, it is necessary to emphasize that IPPUC will welcome and include conversations, debates and cooperation with other public managements entities during the period of this partnership, aiming to integrate the actions and increase the range of the initiatives that will arise from the results of works of the International Cooperation.

IPPUC's expectations regarding this Cooperation

The first question that should be made to a city interested in positioning itself as a reference for modern urban space, internalized with the principles of sustainability, from the mobility point of view, is: Is your city **cyclable**? Curitiba wants to be more. The city intends to find answers to the following questions:

1. How can the bicycle be part of its citizen's lives, not only for mobility?
2. How to integrate the diverse and dispersed existing cycling infrastructures among
3. themselves, as well as to the local mobility system?

To find "ways" and satisfactory answers to both questions, Curitiba intends to make associations. One of them should be with a country that has a long tradition in the use of bicycle. Countries where the "paths" to initial solutions have already been opened and the problems were solved or even mined. Countries where the bicycle mobility was so deeply inserted in the daily mobility trips that it has reached another stage in the human evolution.

Certainly the Netherlands is one of these countries. The support already given to countries such as Colombia, some African Nations, and Asia enables them to help us create satisfactory answers. More than that, technicians from these countries may certainly support the technicians from Curitiba, especially from IPPUC, in the development of projects that represent true solutions and answers, for the bicycle to be part

of the daily life of those who live here. The Dutch "expertise" in the topics linked to cycle mobility is unquestionable.

Matters related to cycle mobility that could be developed during the cooperation

Among some of IPPUC's expectations related to this consultation/support/ development of the projects are the assistance in projects and fundraising processes - to finance the implementations. For the second issue, it's possible to foresee the support that might be conceived to Curitiba's Municipality to format procedures to present to institutions such as the IDB, the World Bank, the French Agency of Development, Fonplata, among others. It is clear that such procedure would succeed the development of a project with an intense Dutch participation.

The range of possibilities includes (as an assistance in the activities listed below):

- Creation of bike racks in transport terminals (i.e. new terminals - Hauer Villa, Tatuquara and Campina do Siqueira, among others and the existing ones).
- Interaction with financial institutions such as the: IDB, BIRD, World Bank, AFD, Fonplata, etc., to finance cycle infrastructure projects.
- Elaborate cycle infrastructure projects manuals.
- Elaborate structural bike axis projects that would go from north to south, and east to west in the territory of the city.
- Technical training (courses and workshops) for some staff from IPPUC and other Departments of Municipality to enable them to develop future bike infrastructure projects;
- Development of specific opinion or satisfaction inquiries concerning the cycle mobility to run with the population, i.e.: Indicate elements that should be part of these inquiries about bicycles, as well as information needed to subsidize cycle path projects.
- Development of a micro network project for bike infrastructure in CIC (Industrial City of Curitiba).
- Possible Animation Axes, i.e.: a safe and segregated bikeway connecting Candido de Abreu Street ("leisure cycle" project) to the Barigui Park on Sundays, with monitoring and control.
- Others that might result from future technical meetings among the cooperation parties.

In a very special way, the Dutch consultation could also be in charge of a special project regarding the integration of cycling with other public transportation modes. Recent experiences on bicycle x train integrations in the Netherlands are formidable and can be adapted and applied to our system as well, being operated by bus, or, in the future, by the subway. Although the subway is still a long term reality, our transportation corridors and terminals are able to receive integration projects similar to the Dutch ones. Especially because the peripheral neighborhoods surely require long distance and unfeasible trips, incentivizing bike users to integrate with collective modes of transportation.

What IPPUC can offer

IPPUC could host the "living lab" for works involving cooperation. Therefore, IPPUC can provide a structure similar to the one suggested below:

1. A room that can house until 3 (three) technicians and 2 (two) interns. There are two possibilities of space to be used by the lab and the confirmation of which space will be used depends on the resolution of some bureaucratic issues.
2. The technicians that will be involved with the cooperation should bring their own computers (laptops) to develop their work. They will have access to IPPUC's network and Wi-Fi Internet.
3. Meeting rooms, available when needed, upon prior reservation;
4. Cars for field visits, also upon prior reservation;
5. Access to the Cafeteria for basic food (lunch) and snacks (up to 17h).

6. Facilitation for meetings with IPPUC's technicians and with people from other local government agencies to get specific information of interest for the cooperation works.

What we would like to get from the Dutch part could bring

- 1) The presence, preferably, of 2 (two) technical experts (to coordinate the cooperation tasks), one of them with expertise in planning and the other in bike infrastructure projects. They should work for eight hours/day along with other local technicians. The experts might be engineers or architects, but it is essential that they do have an extensive experience in planning, project or implementation of bicycle infrastructure networks and present credentials of participation in at least three works related to bike mobility in Dutch and/or in other European cities.
- 2) The presence of 2 (two) Dutch interns/trainees, studying Architecture or Engineering, throughout the whole course of the cooperation program or work;
- 3) Dutch Project or Planning Manuals;
- 4) It is important that the team presents documents (books, notebooks, references) of projects with examples of the experiences already gained, related to what is set to be worked together during the cooperation, preferably in English or Spanish.

IPPUC STAFF involved

PRESIDENT

Sérgio Póvoa Pires

MOBILITY COORDINATION

Márcia Teixeira

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Ariadne Giacomazzi Matei Manzi

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Antonio Miranda

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Marcos Lara

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ADMINISTRATIVE SUPERVISION

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URBAN FURNITURE COORDINATION

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Daniele Moraes

Tomoko Miyazono

PROJECTS AND PROGRAMS COORDINATION

Fabiano Losso

UFPR - Universidade Federal do Paraná



Why UFPR?

- Created in 1912 is the first Brazilian university
- The UFPR has 74 Post-Graduation Programs: offering 69 Academic Master Degrees, 49 Doctorate Degrees and 5 Professional Master Degrees.
- More than 20,000 students distributed in 123 courses.
- 46 undergraduate courses classified as excellent or very good (**Professions Student Guide 2016*)
- Partnership with public and private sector
- Partnership with public and private universities

What do we have to offer?

The UFPR is a reference university in Brazil concerning to education, research and approach to community. It was the first university founded in Brazil (1912). Actually most of its 123 courses are classified as excellent or very good (**Professions Student Guide 2016*) and develops research in several areas closeness to the public and private sector.

The city's history and UFPR are closely linked: the reputation of Curitiba as an innovative city has been reinforced by UFPR alumni.

Innovation, sustainability, interdisciplinarity and internationalization are part of our institutional focus.

What do we aim for?

- UFPR Ciclovida Program works as hub between academic, government, organized society and the private sector. We intent to use Ciclovida as a platform for research and development of new models and/or products focused on sustainable mobility.
- Mobility and Exchange of researchers (teachers and students) - partnership between the graduation and post-graduation.
- Topics for master dissertations, doctoral thesis and post-doctoral researches.
- Architecture, Urban Planning, Environment Engineering, Design, Architecture, Urban Planning, Environmental Engineering and Design, are some focused researches area.
- Research about critical aspects for community engagement (gamification and collaborative design as alternative approaches)



Why UTFPR?

The Technological University of Paraná (UTFPR) is the first university of its kind (technological) in Brazil, owing its origin to the upgrading of a Federal Centre of Technological Education - a secondary school based on an apprenticeship program. Therefore, the Technological University's history goes back to the foundation in Curitiba of the School of Apprenticeships and Trades in 1909, and proudly assumes as heritage its expressive trajectory on professional education.

Nowadays we offer more than 100 undergraduate courses in Technology, Bachelors of Science and Bachelors of Arts, as well as several graduate/Masters and postgraduate/PhD programs.

We have as mission to promote education with excellence based on research and extension programs. Our goal is to continue establishing ethical and productive interaction with the community towards social and technological development.

What do we have to offer?

In our Civil Construction and Design Schools, we focus on innovation and technology production.

In these Faculties (DACOC & DADIN), there are practical research centres of different scopes:

- The Green Office_ a living lab for sustainable practices (Escritório Verde);
- The Experimental Construction Site (Canteiro Experimental);
- Urban Planning and Landscape Design Lab (LUPA);
- Project Studio Model Office (EMAU);

Besides academic research in graduate/Masters and postgraduate/PhD programs concerning Technology Development (PPGTE), Environmental Sustainability (PPGEC) and Planning and Public Governance (PPGPGP).

What do we aim for?

- Exchange of experiences, ideas and projects between parties;
- Establishment of new branches of research;
- Long-term active research partners;
- Consortium development between schools, institutions and public parties;
- Research implementation concerning social and technological development.

PUCPR - Pontifical Catholic University of Paraná



Why PUCPR?

- 30.000 students
- 1.300 professors
- Ranked first place among the private universities in Paraná in terms of scientific publications (20% of all scientific publications in the state)
- Expertise in building living labs for collaborative design with public institutions and private institutions
-

What do we have to offer?

PUCPR is recognized as one of the main universities in Brazil due to its infrastructure developed to foster excellence in education and influence in a decisive way the socioeconomic progress of the community. PUCPR's strategic plan for 2020 aims at fostering partnerships between the university, business companies, and the productive sector. To reach that goal, PUCPR is developing joint projects in an agile way.

Cities is one of the five main strategic themes for PUCPR. The Postgraduate Program in Urban Management (PPGTU) has a research line on Planning and Design of Urban and Regional Spaces with a specific project on urban mobility, in which cycling is a recurrent dissertation topic.

What do we aim for?

- Joint research projects in the line of our researchers' activities;
- Joint organization of scientific events with repercussion in the existing and future applied research in Curitiba, as well as its metropolitan region;
- Mobility projects for graduation, master, and doctoral students as well as the faculty staff



Why Positivo University?

The Universidade Positivo is a private, for-profit university. It is characterized by its passion for teaching and aims for excellence in the educational process. Its objective is to transform the lives of people through quality education. The university does this by encouraging research and innovation, technologic advancement and investment in outstanding infrastructure. Today, the university offers a complete suite of programs: undergraduate programs, specialization and MBAs, master & PhD program. At the beginning of 2014, the university launched a comprehensive online education program to be present in all of Brazil. Research at Universidade Positivo aims to generate knowledge in a systematic way, in the domains critical for the Brazilian society and to develop methods and techniques to ensure professional competence. The university focusses on scientific activities that strengthen innovation in products, services and processes and that benefit the society at large as well as nourish the capacities of students and faculty. In terms of international partners, our network has enjoyed continuous growth and links us today to over 50 universities and institutions worldwide.

The university developed (2010) a mobility plan that evaluated the quality of the public transportation, used by the students, from downtown area to campus. This initiative reflected the consciousness about the need to use public transportation and to think about bike as a complementary modal.

Faculty with experience in urban design; Integration between urban theories and practical experiences, considering Curitiba like a laboratory;

Vast experience developing workshops in urban studies; five different workshop with the Florida University with teachers and students from both institutions, analysing Curitiba urban problems;

What do we have to offer?

The expertise of the Architecture and Urbanism program at Positivo University consists in the integration of architecture, urban design and environmental studies knowledge.

We develop different academic researches, which reveal the great experience of our faculty.

The urban environment is one of our main concerns. Considering this, we've developed two applied academic studies.

The first one involves the Adrianópolis area, a small city located in the north of the state, which have huge urban problems such as centrality, identity, poverty, river pollution, etc.

The other one deals with a neighbourhood close to the University, Jardim Gabinetto, where the inhabitants live near a small river without environmental and landscape quality.

1. five editions of a Workshop entitled Curitiba International Seminar (SICWB), which developed urban intervention proposals, involving academics from Brazil and abroad.

What do we aim for?

1. Research as a process and a partnership, not one time only - we aim at a long term cooperation process, with this MoU as a head start of a great partnership
2. Innovation in research and implementation.
3. Exchange of ideas and projects between parties.

CICLOIGUAÇU - Associação de Ciclistas do Alto Iguaçu



Why Curitiba?

Cicloiguaçu and its members have been promoting urban cycling in Curitiba since 2005. Our coverage is Curitiba and all neighbor cities that constitute the Curitiba Metropolitan Area. We have been working jointly with local and state-wide officials.

Opportunities

One inspiration for the social organization is the movement from the Netherlands, “Stop de Kindermoord” (Stop Child Murder). The last most violent year in the Dutch traffic was 1972. With around the same population of Paraná today, there were 3.264 deaths (more than 400 people were less than 14 years old) – 9 victims a day. In our State there was 3.365 in 2013 – more than 9 lives a day are lost! Since 2001, the deaths increased 34%. Brazilian traffic is shamefully one of the most violent in the world. This activist movement from the Netherlands was really important for this shift in the mobility policies and promotion of cycling. Since 1972 the numbers just decreased even with implementation of mobility. We wish to make our streets safer, more livable, more human. And we believe that this cooperation with the Netherlands is a great opportunity to exchange and produce knowledge, towards a better traffic as the Dutch – that has known the safest traffic system in the world.

What we can offer

Cicloiguaçu representatives have firsthand experience and a solid involvement with the local cycling culture. Our projects include:

- Education
- Actual cycling experience
- Public Spaces Promotion
- Participative Public Policies
- Ecosystems
- Event organization

We have a multidisciplinary team including urbanists, designers, architects, artists, teachers, lawyers, among other areas.

List of Interests

Research

- Indicators
Cyclability ([level of comfort](#) and metrics by Joao Francisco Noll)
Walkability (<https://www.walkscore.com/>)
- Parking costs
What are the real costs of free parking in public spaces? Who pays it?

- Bike logistics
How much volume is transported by bike within the city? How does it affect economy? Where does it happen? Which items? How to improve it?
- Collaborative Map
An online tool to gather suggestions, complaints and any other observations from the cyclists throughout the city, in order to help with planning and feedback.
- General perception of cycling behavior
What is the opinion/attitude of the general population regarding cyclists?
- Pollution level
Do we have data already? Or do we need to start collecting?
- Noise level
How much noise is produced in denser areas? Who causes it? How people perceive the noise?
- Waiting time by mode
How long pedestrians, cyclists, motorists and motorcyclists need to wait according to traffic planning?
- Perceptions
Individual perceptions of safety, noise level, livability and other factors in strategic points in the city.

Planning

- Sustainable Safety (Duurzaam veilig)
Road safety principles from the Institute for Road Safety Research (Stichting Wetenschappelijk Onderzoek Verkeersveiligheid SWOV). *How safe is Curitiba and how sustainable safe it can be?* Not all the principles can just be applied here, but it would be really interesting to bring this important experience in road traffic safety to the city and contextualize those principles to Curitiba.

Education & Promotion

- Bike to School Municipal Program
- Increase the number of students cycling to school
- Create participative and conscious traffic actors
- Foster cycling culture at school communities
- Strategies to boost cycling behavior (incentives & rewards)
- http://www.torontocycling.org/uploads/1/3/1/3/13138411/behaviour_change_report_final_16_april_2013.pdf

Infrastructure

- Intersections
How to improve cycling flow and safety?
- Roundabouts for cyclists
How to improve cycling flow and safety?
- Bicycle Highways
Today, the tiny network of existing cycling infrastructure we have are with poor surface and bicycles need to stop in every intersection, waiting a gap between cars. In order to be a real competitive choice between the automobile, bicycles need to flow constantly, to allow the cyclist to save energy and keep momentum, developing a constant and average speed that is convenient to its use instead of other means of transportation. This concept of Bicycle Highway seems really

interesting for connecting the borders of Curitiba and the cities that surrounds it with the city center.

- **Adequate Bike Parking**
Commuting to work, school and universities are the main motives for urban travels. Long term bike parking requires a closed infrastructure protected for theft and weather conditions.
- **Multimodal integration**
Curitiba is a compact Metropolitan Region. Bike+Transit integration could greatly improve cycling mode share.

UNIVERSITY OF TWENTE.

Why Curitiba?

In 2014, a Dutch mission to Brazil was organized by Netherlands Enterprise Agency (RVO.nl) on Smart Cities, Smart Grids & Biobased. The mission (consisting of representatives from Dutch universities (incl. University of Twente, UT), governments and the private sector) paid visits to business associations, governments and knowledge institutes in São Paulo, Rio de Janeiro and Curitiba.

Due to its scale and profile, we believe it to be a perfect entry point to start exploring changes for Smart Cities in Brazil. Some of the partners of the mission decided to explore possibilities for joint project development on Smart Cities and Smart Grids in Curitiba. Therefore, in May 2015, together with Natasha de Sena from Wageningen University (WUR) I travelled to Curitiba to discuss possibilities.

The city is well known for its innovative urban planning and transport system - its green spaces per capita are approximately 55 square meters, which is far higher than the recommended UN standards. The city's program of building "lighthouses"—essentially electronic libraries—for poorer residents has become a model for developing cities worldwide. Curitiba demonstrates how develop without mass violence, transportation dysfunction and ubiquitous grinding poverty that plague many other Latin American metro areas. These are among the reasons for Reader's Digest to recently name Curitiba the best place to live in Brazil.

With 1.9 million inhabitants, the south Brazilian city is the country's 7th city. Compared to other large cities in Brazil, Curitiba is relatively rich and prosperous. The state Parana accommodates many Europeans that once emigrated e.g. Poland, Germany and Netherlands. They partly live in colonies nearby Curitiba. The Dutch descendants form a group of 15,000 people. Curitiba also accommodates an honorary consul for the Dutch Kingdom.

What do we aim for?

We want to develop strategic collaboration. This includes the exchange of faculty staff and students, develop research collaboration, share networks and starting up (business) projects, possible joint education and training programming.

We proposed to start up an office and working station to start collaboration and business in the area of Smart Cities – the smart city living lab. We want to include our Dutch partners from the mission to this. The lab should focus on public-private collaboration in the wide area of Smart Cities.

What do we have to offer?

The chances for "Smart Cities" we see in Curitiba are on mobility, urban development and energy transition.

In our research and education, many areas are relevant for the Smart Cities theme:

- Urban design and infrastructure (road, rail and the underground)
- Smart grids and energy transition
- Human-technology-interface and behavioural approaches

- Crowd control, security and reliability of ICT, big data analysis; remote sensing and geo analysis
- (Open) innovation and entrepreneurship; project management of complex (infrastructure) projects
- Smart and sustainable transport, traffic and mobility (modeling, apps)
- Governance, participation and social innovation (incl. public administration, psychology and educational sciences)

In addition, we are an *Entrepreneurial university*:

- creation of spin- offs and facilitation through Technology Transfer Offices as a means of employment
- Creation and maintenance of an appropriate governance structure
- Interdisciplinarity (generation of research funding, PPP)



Interesting Curitiba

The Worldwide reputation of Curitiba among urban planners and specialists is very positive. The pioneer attitude of the city from the 1970s onwards, implementing innovative planning policies and a transportation system, created impact that goes beyond a generation. Furthermore, Curitiba promoted itself as a 'green city' in the 1980s, being ahead of its time in sustainability issues. And Curitiba is, indeed, a very green city, with more than 50 m² of green areas per inhabitant.

The current plans of the Municipality of Curitiba aim at making use of the existing pioneer image of the city and creating a new vision towards a 'Smart city'. This initiative has great potential of reassuring the innovative status from the past, with a clear vision towards the future. Curitiba needs, as any other city, to keep evolving as the urban environment changes in order to maintain functioning services and at the same time creating new ones for new demands.

Alterra is a research institute connected to Wageningen University and Research (WUR) with its focus on innovation based on a long term sustainability vision. Being involved in the new ongoing process that Curitiba is facing, and helping creating the future pioneer initiatives within the city is majorly inspiring. The impact of what Curitiba does is greater than other Brazilian city's – the perks of the planning fame. Therefore, Alterra is pleased in participating on this new phase of projects and ideas, having its head start focused on cycling mobility.

What do we aim for

- Consortium development with local parties – *from educational, public and private sector;*
- Research as a process and a partnership, not one time only – *we aim at a long term cooperation process, with this MoU as a head start of a great partnership;*
- Innovation in research and implementation
- Exchange of ideas and projects between parties
- Contract research – *even though we are a non-profit organisation, all costs for our participation must be financed;*

What do we have to offer

Alterra offers a combination of practical, innovative and interdisciplinary scientific research across many disciplines related to the sustainable use of our living environment. Aspects of our environment that Alterra focuses on include soil, water, the atmosphere, the landscape and biodiversity. We also offer an unique combination of environmental and social sciences, extremely useful when dealing with several types of stakeholders.

The urban environment is one of our main working topics for the coming years. Alterra engages in integrated urban research to support design processes, policy-making and management at local, national and international levels. We have given ourselves the clear aim of strengthening our position as a leading

institute for innovative strategic research and its practical application. We provide wide ranging consultancy and advisory services, matching our wealth of environmental expertise to the needs of the society, policymakers, academia, industry, government and the research community.

Why Alterra?

- World class researchers
- Scientifically sound, strong link with Wageningen University
- Integrated approach and practical applicable solutions
- Advice on implementation and governance
- Vast experience in complex project and program management
- Extensive network of experts at governments, in the private sector and at NGO's



Why Curitiba?

Curitiba is one of the cities globally known for its green and sustainable initiatives. Urban planners and environmental specialists co-operate to make sure that the city will be a green, vital and healthy place to live. Examples of such initiatives are related to sustainable public transport, making green space and parks available for inhabitants and education programmes at different levels to raise awareness regarding environmental issues.

CAH Vilentum, with campuses in Dronten and Almere, The Netherlands, offers higher education in agriculture, biology, ecology, water, green business development, food & health, urban dynamics and geo, media & design, to mention some of the “green” study programs. Furthermore, CAH Vilentum is involved in applied research projects in these scientific areas .

The City of Almere, home to one of the campuses of CAH Vilentum, has green ambitions similar to Curitiba. Almere is preparing the coming World Expo on Horticulture, Floriade, to be held in 2022. Floriade will not only be an event. Starting already now, Almere is developing major green initiatives that will contribute to the development of an extension of the current city center. During the Floriade World Expo, visitors will see state of the art green urban innovations. Almere seeks co-operation with cities worldwide, with similar ambitions, in order to create a global movement of “Growing Green Cities”. Vital issues to address are: feeding, healthy, greening and energizing the city of tomorrow, with smart, green and sustainable solutions.

CAH Vilentum as a green university is an important partner to the City of Almere. Students and researchers participate in various projects that contribute to the development of the Floriade. In the international movement of Growing Green Cities that Almere is helping to establish, CAH Vilentum is initiating academic partnerships in such cities. That’s why Curitiba is so important for us!

The opportunities we see

Around the globe, we want to connect lecturing and research staff and, maybe the most important, students, our professionals of tomorrow. We want to create situations of mutual inspiration, learning and understanding, because we think this contributes to sustainable solutions for the future. Academic co-operation is an important instrument to do so. Such co-operation is most beneficial to all participants, if it is embedded in a broader context where academic, professional and personal development of students and staff can be enhanced.

In Curitiba, CAH Vilentum has found interesting leads for co-operation. Agreements will be elaborated. In these agreements, both the cities of Almere and Curitiba will be involved, to make sure that projects of academic co-operation optimally connect to relevant sustainable and green initiatives in the cities. This is a sound basis for innovative initiatives.

What are we aiming for?

On the basis of agreements, we want to exchange students and staff, recruit students for study programs, jointly develop study programs, develop and share research projects and contribute to green and sustainable innovations in our cities and our regions. Business partners and local and regional government should be involved to make sure that activities are meaningful to the world of work. A flywheel of activities will be a bilateral initiative with PUCPR in order to jointly develop a study program “Growing Green Cities”.

What can we offer?

- The setting of a small-scale, green and innovative university of applied sciences with a number of English spoken study programs / specialisations aimed at young professionals
- Almere as a living lab for smart green urban solutions, including smart urban mobility systems, smart waste management, experiments with urban agriculture, with sustainable building projects, with experiments for feeding, greening, healthy and energizing the city.
- Involvement in applied research
- An innovation lab / Green Campus Floriade Flevoland, to be built next year, where students and researchers can work on innovative green research projects and where showcases of smart green solutions can be exhibited
- The horizon of participation in the Floriade 2022
- A vivid network of international academic partners, government partners, NGO's

ECOFYS



sustainable energy for everyone

Ecofys is a consultancy in the areas of sustainable energy strategy, policy and markets. Knowledge areas are renewable energy, e.g.: wind, solar and bio-based; energy efficiency in buildings, heating networks, smart grids, decentralized energy systems, sustainable transport; climate financing, mitigation and adaptation. We are familiar with the Brazilian market due to a number of projects that we have undertaken for various parties (see below for some examples in the area of bioenergy). We see that there is a need to connect and develop technical and policy concepts, and Ecofys would like to carry out more projects for Brazilian clients in government and the industry.

Conditions for participation

- Identification of research/consultancy issues in Curitiba on the short-medium term
- Concrete Leads
- Access to the network of the consortium
- Allowance of tickets?

How can Ecofys contribute?

- We can have one of our consultants to work from Curitiba for a few weeks a year/semester
- We can offer mentoring for (Brazilian) trainee (s) on a related topic in our office in Utrecht or in Curitiba
- We can provide meeting space at our offices in Utrecht
- We can arrange introductions within our network in the Netherlands/Europe

When is the collaboration a success?

- Concrete consultancy commissioned Ecofys, possibly in consortium with other parties
- Profitable project
- Continuing activities

Project references

- Market opportunities for Dutch BBE companies and research organisations, RVO, 2015
- Organisation of Biobased Seminar for British consulate, Brazil, 2014
- Organisation of Biobased Seminar- Opportunities for NL-BR cooperation, SP, Brazil. – NL Ministry of Foreign Affairs, 2013
- Improving Sustainability of Brazilian Sugar Cane Ethanol and Role for Dutch Stakeholders, 2013
- Beijing Bicycle Strategy and Policy, 2015