Living Lab for sustainable innovation in Madrid
1. **GOAL**
Platform to stay tuned to societal problems and to test prototypes and pilots of public policies and services in order to solve urban problems through collective intelligence and using the campus as a test bed and living lab for innovative solutions.

2. **CONCEPT**
To develop a virtual and physical context (platform) to re-invent the city including technology, innovation and new governance models through:
- Listening to city and university community problems
- Co-creating, through collective intelligence, prototypes and pilot projects answering identified problems
- Experimenting, demonstrating and iteratively designing co-created solutions
- Proposing public policies and services tested in the campus

This platform will foster sharing and inspiration processes between public and private stakeholders, and it will boost a pioneer multi-actor partnership towards sustainable transformations and the global 2030 agenda (Sustainable Development Goals).

The platform will be developed in a meaningful and transparent way for every participant and rooted in the principles of collective intelligence.
3. STAKEHOLDERS

Platform will relate the following diverse stakeholders from multiple areas and with different perspectives:

**Core team**
1. **UPM**: faculty, students, and staff.
2. **Madrid City Council**: 5-10 civil servants working in the area of environmental and mobility, that will take an active role on listening, ideation and implementation phases.
3. **Massachusetts Institute of Technology (MIT)**: The Center for Collective Intelligence (CCI) will provide its Climate CoLab platform software as well as its previous experience on designing and implementing collective intelligence projects.
4. **Madrid citizens**: individuals that champion the listening and ideation process.

**External partners**
1. **Other public organizations**: Spanish Office for Climate Change, Spanish Agency for International Cooperation and Development, Ambassador on special mission to implement the 2030 Agenda in Spain.
2. **Other universities**: Universidad Complutense de Madrid, Universidad de Salamanca, Sussex University - STEPS & SPRU Centre, Technical University Delft, Smith College, Harvard University, Universidad de Cuenca, Universidad del Azuay, Tecnológico de Monterrey, and other universities that are participating in national and international networks (ISCN, SDSN, REDS, and CITIES).
3. **Social organizations**: ONGAWA, Fundación ACCIONA Microenergía, Fundación Tomillo, Acción Contra el Hambre, Foro Agrario, Obra Social La Caixa, Fundación Ana Bella, Colegio Religiosas de María Inmaculada, EHAS (Enlace Hispano-Americano de Salud), IS Global (Instituto de Salud Global).

Each of these partners has diverse interests and incentives to participate in this initiative that are shown in the following table.

During the first months, several collaborative instruments will be designed to allow a balanced diversity with mutual benefits and enough flexibility.
<table>
<thead>
<tr>
<th>Stakeholder</th>
<th>Benefits / Incentives</th>
</tr>
</thead>
</table>
| ACADEMIA                    | Develop new models to promote interdisciplinary research, teaching and social innovation  
Campus re-generation and connection with the city  
Listening to society and incorporation of global agenda |
| PUBLIC ADMINISTRATIONS      | Support to develop sustainable policies (fostering environmental and social equity)  
Strengthen public programs through knowledge and experimentation developed in the platform  
Strengthen city staff’s skills and commitment |
| PRIVATE COMPANIES           | Test technological and organizational solutions  
Improve listening skills, specifically to young population  
Develop of new business models and technology-based social entrepreneurship |
| CIVIL SOCIETY               | Problem solving  
Increase social impact  
Access to expert knowledge and ability to systematize learning processes.  
Process evaluation and continuous monitoring |
| SHARED FOR EVERY STAKEHOLDER| Complementarity of resources and skills  
Alignment with global trends and with the Sustainable Development Goals  
Connection with pioneering initiatives  
Visibility and connection between initiatives  
Shared resources. |

4. WORKING AREAS.
During the listening process, identified problems will be clustered to facilitate efficient development of collaborative solutions. Although the clustering process will be carried out in the future, the following tentative areas are proposed to visualize potential working areas:
- Urban planning, management of urban environment and heritage
- Sustainable mobility
- Energy transition
- Eco-efficiency and circular economy

5. EXAMPLES ALREADY DEVELOPED.
The following initiatives are examples of activities already developed using the UPM campus as a test bed for sustainable transformation, or using collective intelligence tools for sourcing and evaluating climate change-related projects. While they do not cover the wide approach presented in this note, they can help to envision potential activities.
1. ItdUPM building as a “concept proof”. A pilot project to integrate multi stakeholder perspectives, with a rich learning process was developed (http://www.itd.upm.es/espacio/). The building was designed with a twofold function: first as a space to test and show sustainable technological experiments, and on the other hand as space for interdisciplinary work, and as a hub for sustainable innovation for the UPM community as well as other external stakeholders such as private companies, non-profits, public administration, civic movements, and informal associations.

2. Urban Agriculture. The following prototypes were designed, implemented, and operated by Faculty and students: ecological urban garden, outdoor plant wall, indoor plant wall, real-time environmental sensor network and weather station. Results obtained are related to pollutant measurement, mitigation systems and strategies assessment, support to the assessment and upscaling of urban agricultural programs run by the city council, as well as training within the experimental facilities. Moreover, links with international initiatives were established (UE-China, Latin-America: Brazil, Cuba, México, etc.)

3. “Alianza Shire”: energy access in refugee camps. Alianza Shire started from the following question: is it possible to apply higher education learning processes to refugee camps? Shire Partnership is an example of how to face a social problem (energy access in a refugee camp) generating positive impacts (power generation, education, and new opportunities for refugees) through a real alliance between public organizations (UPM, Spanish agency for development, UN High Commissioner for Refugees, and Norwegian Refugee Council), private companies (Iberdrola, Philips, and Fundación Acciona Microenergía) and local entities (ARRA and EEU). http://www.itd.upm.es/alianzashire/
4. **Climate CoLab**: The Climate CoLab platform, developed by the MIT Center for Collective Intelligence (CCI), hosts a growing, global community of over 100,000 people— including experts, businesspeople, nonprofit leaders, students, and others—from almost every country in the world. This community is engaged in proposing and evaluating proposals for climate change mitigation, adaptation, and geo-engineering. The platform has over 2,400 proposals and has hosted over 94 contests, many with partners such as the UN Executive Office of the Secretary-General, World Bank, Nike, Carbon War Room, 100 Resilient Cities, the City of Boulder, CO, and many others.

6. **ROAD MAP (UNDER CONSTRUCTION)**

1.1.- Decide the core operating team and pre-launch team (settle the framework, etc.)

1.2.- Short-term agreement

1.3.- Platform translation

1.4.- Identify any customization

1.5.- Train people on how to use the platform (how to run contests); identify judges, advisors, fellows. Communicate internally

1.6.- Architect the overall framework for key stakeholder engagement

1.7.- Brainstorm session conceptualizing the contest topics (8 months for each contest) (potential sponsored contests)

1.8.- Integrate the four pillar areas of the MIT Plan Accelerator:
- Engagement
- Evaluation
- Matching Resources
- Knowledge Bases & Impact Measurement

- See diagram below.

**Four Pillars of the MIT Plan Accelerator:**

[Diagram showing the four pillars of the MIT Plan Accelerator: Engagement, Evaluation, Matching Resources, Knowledge Bases & Impact Measurement.]

<table>
<thead>
<tr>
<th>Principal Input &amp; Key Drivers</th>
<th>ENGAGEMENT</th>
<th>EVALUATION</th>
<th>MATCHING RESOURCES</th>
<th>R&amp;D</th>
<th>Implementation</th>
<th>KNOWLEDGE BASES &amp; IMPACT MEASUREMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Feedback</td>
</tr>
</tbody>
</table>
1. **Engagement**: Incentivize people across society to develop and collaborate on proposals.

2. **Evaluation**: Engage a network of experts to review proposals’ feasibility and impact.

3. **Matching Resources**: Build partnerships to provide the top proposals with further research and development, or the resources to implement or scale their work.

4. **Knowledge Bases & Impact Measurement**: Continually track impact and progress, and make the results widely available as case studies and best practices.

7. **RECENT WORKS**

**2015:**
- International Sustainability Transitions Conference 2015, Sussex University (UK): *itdUPM as a “niche” in a traditional University environment.*
- itdUPM building refurbishing through a collaborative process between Faculty, students, staff, and private companies. Link to open data on sensors and additional info: [http://monitoring.robolabo.etsit.upm.es/itd/monitoring.php](http://monitoring.robolabo.etsit.upm.es/itd/monitoring.php)
- Open sessions about innovation, technology and sustainable development (“Unlikely Dialogues”): [http://www.itd.upm.es/dialogosimprobables/](http://www.itd.upm.es/dialogosimprobables/)

**2016:**
- UPM, is accepted in the International Sustainable Campus Network (ISCN).
- Award to the itdUPM building in the Global Conference on Green Infrastructure (Colombia): [https://nube.cesvima.upm.es/index.php/s/pUcMmLQQRwM4Qlp](https://nube.cesvima.upm.es/index.php/s/pUcMmLQQRwM4Qlp)
- Paper about the implementation of a Project Based Learning methodology for a semester in the Master on Strategies and Technology for Development: Using the Project Based Learning (PBL) methodology to assure a holistic and experiential learning on a Master Degree on Technology for Human Development and Cooperation. [http://www.ijee.ie/latestissues/Vol35-2B/06_ijee3307ns.pdf](http://www.ijee.ie/latestissues/Vol35-2B/06_ijee3307ns.pdf)

**2017:**
- Presentation at the ISCN conference 2017, at the University of British Columbia (Canada): “Going beyond rhetoric in building multi-actor environments at
universities”.

- Paper in the conference called “University and SDGs”, at the Universidad Autónoma de Madrid (España): “Regeneración de campus para la creación de un laboratorio vivo de sostenibilidad ("living lab") en el Campus de Excelencia Internacional de Moncloa”.

- Editors of the monography on social innovation: https://www.accioncontraelhambre.org/sites/default/files/documents/revista_rets_n36.pdf

2018:
