1º Workshop - C2FUTURE: Competence Map, Skill Gaps and Complementarities.

First Workshop Report

aclima

C2Future
Clusters for the City
of the Future

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1 | GENERAL OVERVIEW

This first workshop regarding the Competence Map, Skill Gaps and Complementarities between the clusters took place on the 18th and 19th of May during two working sessions. The main objective of this first workshop focused on finding the common links among the activities of each cluster in order to go forward in the design of the common value chain.

During this working group C2Future partners discussed about the possible technological niches, new global mega trend and opportunities, products, services and innovation processes that build up to the value of the partnership and combined competences of C2Future partnership.

Taking into consideration the results from the online survey and the competence map, skill gaps and complementarities report, project partners have worked to define and design the different components of the value chain, showing the interrelations of its different components and identifying areas of complementarily, cross-sectorial cooperation, as well as core areas of competencies.

The following table exhibits the clusters and partners that have been involved in the workshop:

CLUSTER	Country	Participants	Expertise Area	Activities
SEKEE	Greece	Manos Macromallis and Vasia	High Tech	Mobile applications, telecommunications providers, innovative communications.
GREEN HOME	Italy	Giuseppe Rossi and Gilda Capano	Sustainable building	Smart cities
CLM	Italy	Sara Cortese	Smart mobility	Supply chain (automotive, nautical, railway, intermodal transport and infrastructure, etc.)
ACLIMA	Spain	Igor Aranguren and Mikel Ibarra	Environmental services	6 value chains: waste, water, air, climate change, contaminated soils.
DTI	Bulgaria	Krasimira Shindarova	Information and Communication Technologies	ICT and Digital transformation
ICT	Serbia	Marina Blagojevic and Anja Pantelic	Information and Communication Technologies	ICT and Digital transformation

1.1 WORKSHOP PART 1.

➢ **THE TOPICS ADDRESSED:**

Throughout the session that took place on the 18th of May, the following points were approached and discussed:

- **General questions on the capacities of each cluster:**

Each of the participating clusters presented an overview of the activity carried out by their member companies, including a mention to the different value chains in which they are currently active.

- **Areas of expertise of each cluster:**

In addition to the capacities, the clusters participating in the working session also exhibited an overview of their areas of expertise.

- o **SEKEE**: Cluster located in Greece, which is comprised of high-tech companies whose business activities include the development of added value mobile applications, the provision of added value services for telecommunication providers, the provision of innovative communication, content and application services.

- o **GREEN HOME**: Located in Italy, they promote the affirmation of sustainable building with new technological solutions to design and build housing. The Mission is to support the networking of competencies to develop value chain innovation and specialized services for sustainable construction.

- o **CLM**: CLM is an Italian network, able to provide dedicated services, to research and develop innovation and internationalization projects related to smart mobility. The seek to provide solutions to the changes induced by the advent of autonomous and connected vehicles.

- o **ACLIMA**: The cluster located in Spain represents and works across the value chains in waste (reduction, reuse, refabrication, energy recovery, recycling and management), contaminated soils (investigation and recovery), integrated water cycle, air and climate change, ecosystems and Eco-efficient Production and Eco-design.

- o **DTI**: Located in Bulgaria, their activities focus on improving competitiveness of its members, which are Information and Communication Technologies related, in various aspects such as the penetration to new international markets, digital transformation and industrial modernisation or improvement of their strategies.

> - **ICT**: The ICT cluster from Serbia focuses on developing and building a stimulating environment for the Information and Communication Technology sector by establishing cooperation and lasting partnerships, encouraging innovation, enabling access to new knowledge and technologies, educating professional staff, coordinating and activating the ICT sector of Central Serbia.

- **International experience:**

From a generic perspective, the current international activity as well as the past international experience of the member companies of the clusters is low. Participants from each cluster acknowledge that the international capacity of the companies in their clusters is still low owing to different factors such as the small size of the member companies or the lack of competences.

However, there are exceptions to this rule, as member companies of Aclima, CLM and Sekee have had international experiences to certain extent.

In the case of Aclima, a considerable number of companies that belong to the environmental cluster have extensive international expertise, which comes from activities especially on Latin American markets. Regarding CLM, the fact that some member companies are multinationals that are present in different continents adds international knowledge and therefore expertise to the cluster.

Due to their experience in the field and as far as internationalisation is concerned, Aclima CLM and Sekee will be the members that are able to provide the other clusters with insights into the aspect of internationalisation in this field.

- **Identified preferences, by sector and country:**

In a previous working session with the members of each cluster, an analysis was conducted to select potential countries that could be of interest of all. After analysing the results of the surveys that were filled, it was concluded that the countries with most potential to be of interest, were the USA, Mexico, Colombia, Algeria, and Canada.

To follow up and further define these markets, each cluster was asked to rank the top 3 countries (1being the most important) that are believed to be of most interest for them.

We exhibit in the following table the priority markets chosen by each of the clusters out of the 5 that were suggested in advance:

CLUSTER	Country preference
SEKEE	**1**.USA / **2**.Mexico / **3**.Colombia
GREEN HOME	**1**.Canada / **2**.Algeria / **3**.Mexico
CLM	**1**.Mexico/ **2**.Canada/ **3**.USA (Driven by automotive sector players)
ACLIMA	**1**.Colombia / **2**.Mexico / **3**.Algeria
DTI	**1**.Colombia / **2**.Mexico / **3**.USA
ICT-NET	**1**.USA / **2**.Canada / **3**.Mexico

> ➤ **IDENTIFIED COMPLEMENTARITIES BETWEEN CLUSTER:**

After holding the first workshop and after bringing to discussion the topics mentioned above, it was commonly agreed that **the Information and Communication Technologies (ICT) is the common field among the participant clusters** in terms the creation of a shared value chain. Despite the differences between the expertise areas of each cluster, digitalisation is a common link between all of them.

Therefore, the main conclusion drawn from this first working session is that the **ICT field is transversal to all clusters**, and the design of the common value chain should be articulated around the area of **digitalisation**. The application of this digitalization will have to take place in certain specific areas, which will allow the other clusters to showcase and contribute their knowledge in those specific fields.

1.2 WORKSHOP PART 2.

> ➤ **THE TOPIC ADDRESSED:**

Further analysing the digitalization and ICT, specific topics were identified out of these fields. Based on the conclusions of the first session, and the chosen fields, the following points of connection between clusters were addressed:

- **Cross- matching with value chains add value added technologies:**

According to the topics discussed in the session, each of the clusters announced which of the value chains they are involved in. The results are displayed in the following table:

	Smart urban mobility/Logistics	Environmental Tech. for cities	Sustainable building and construction	ICT for Smart sustainable cities	**Added value chain
ACLIMA	✔	✔	✔	✔	
CLM	✔	✔		✔	*E-Government*
DTI	✔			✔	
ICT-NET	✔			✔	
SEKEE	✔		✔	✔	

**During this second day, Giusseppe from the Green Home cluster was not able to be assist so the information regarding his activity will have to be collected separately.

- **Mega trends, technologies, specific opportunities identified.**

During the working session, the clusters were requested to share the information they might have and their perspective regarding global mega trends, technologies, and specific opportunities they might have identified. Some of the trends and opportunities that were discussed in the session are mentioned below:

- ACLIMA talked about ongoing opportunities in biodiversity-related projects, such as biosafety monitoring through Drone technologies. The Drone Technologies for environment could help to test solutions avoiding risky scenarios as in dams, floods, drains etc.

- CLM identified opportunities in the alternatives to classic fuels, promoting electric and electrified vehicles. Additional alternatives to the electric car should be also promoted such as the Biomethane, with applications in the livestock and other agriculture related areas.

- ICT and DTI both agreed with Aclima in the current growth of Drone technologies with a wide range of applications and therefore opportunities of growth and expansion.

- SEKEE mentioned the ICT solutions focused on Efficiency Technologies for a variety of fields, such as smart logistics, building automation, contamination measurement…etc.

- **Entry opportunities in the target countries: contacts, Institutional contacts, Tractor (Driving) companies.**

In general, no particular contact or entry points worth highlighting were mentioned. However, It was agreed that it would be interesting for each cluster to review the trade agreements that may exist between their home countries and the target countries, in order to identify possible institutional access routes. It was also suggested that the same could be done among the member companies of each cluster to verify the existence of companies with a driving force in the target countries.

On the other hand, in the case of CLM, it was mentioned that through the strong relationship with the automotive sector, some of the member companies of the cluster are strong tractor companies with a developed presence in LATAM countries.

- **Opportunities in Colombia: Different perspectives.**

Throughout the session, the advantages and drawbacks of choosing Colombia as a target market were discussed.

On the one hand, the participants agreed that there are many opportunities in Colombia, as environmental and smart city issues are still at a very early stage and still need to be further developed. Therefore, it would be a favourable scenario to discover opportunities to enter the market by implementing technologies from the bottom top and provide solutions to problems that they do not yet know how to solve.

On the other hand, due to the lack of environmental awareness in the region, the C2 Future project Time Frame would be the main issue to address. Both ICT and CLM commented on the problem of implementing solutions that imply a cultural and social change, which is usually a long-term project that would require many years of process. In this sense, taking into consideration that the participating companies which will be involved in the project are medium and small size companies, the disadvantage of not being able to implement a project in a country like Colombia, within the defined time frame, is raised.

Finally, it was agreed that the best way forward would be to identify the **reports of investment in different cities in the case of Colombia**. This way once a particular project scope has been defined, specific technologies and development plans can be drawn up to shape the common value chain for C2future.

2 | CONCLUSIONS

- **The ICT field is transversal to all activities.**
  On the one hand, we find clusters with activities in specific value chains such as Mobility, Construction or Environment, and on the other hand, we find that ICT clusters can add value comprehensively.

- **Smart Waste management is one of the sectors with common opportunities**. It brings together environmental issues where ICT solutions can be offered to build on additional value.

- **Mobility** in relation to urban traffic management and environmental policies for pollution reduction, also enhanced with ICT solutions. This can be addressed as another point of common interest among the clusters

- **Countries such as Colombia, Mexico or Algeria are finally identified as opportunity markets** to provide technological solutions that are lacking, by implementing a bottom to top project. However, it will be necessary to identify specific investment plans in cities and projects to assess the scope.

3 | PENDING TOPICS

- At the end of the session, it was mentioned that in order to move forward and further analyse the identification and design of future value chains, each cluster would formally share certain information with the rest of the participants. However only one of the clusters completed the follow up questions.

- ICT-Cluster shared a brief conclusion of their perspective:

    - For CLM they could be interesting the solutions/projects listed in SC1 (Smart urban mobility and logistic) and partially solutions/project from SC4 (Information and communication technologies for smart and sustainable cities) from our list 2.

    - For Aclima they could be interesting the solutions/projects listed in SC2 (Environmental technologies for cities) and SC4 (Information and communication technologies for smart and sustainable cities) from our list.

    - For Green Home they could be interesting the solutions/projects listed in SC3 (Sustainable building and construction and smart homes) and SC4 (Information and communication technologies for smart and sustainable cities)

    - They also checked the special trade agreements, however they were unable to find any in the target countries. What they do have is a Generalized System of preferences guidebook, where they display a list of the what the US would preferably import.

- Topics to further analyse:

    ➢ Double-check of trade agreements between the countries of interest and countries were the clusters are located.

    ➢ Identification of specific projects or tenders regarding smart cities and the environment, specifying some target opportunities and locations.