Food hub as an efficient alternative to sustainably feed the cities

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24 juin 2016
Plan

Context and Background
Methodology
Results
Discussion and Conclusion
With the increasing population in cities: world's population live in urban areas (WUPR, 2011)

67% (2015) → 86% (2050)

Challenge to feed the cities ......................................................... in a sustainable way

Question – Which urban food logistics solution could be an efficient alternative to sustainably feed the cities?
How can we feed the cities in a sustainable way?

City logistics + Food System

Source: Scopus (2016)
Methodology

- **Analysis of literature review:**
  - Collection of relevant secondary data: the revision of scientific and academic books and articles, news reviews and public reports.

- **Theoretical framework**
  - Food hub definition
  - Elements

- **Case study**
  - Bogota, Colombia
How can we feed the cities in a sustainable way?

**Urban Logistics Spaces (ULS)**

- **Context and Background**
- **Methodology**
- **Results**
- **Discussion and Conclusion**

**Literature review**

- **Food System**
- **City logistics**

- **ULS Generals**
- **Urban Distribution Centers (UDC)**
- **Private or semi-private**
- **Logistics Hosts**
- **Specific**
- **Multi-player**
- **Urban Logistics areas (ULA)**
- **Reception points of Vehicles (RPV)**
- **Reception points of marchandises (RPM)**
- **Urban Logistics Boxes (ULB)**
- **ULS Specialist**

**Food System** + **City logistics** = How can we feed the cities in a sustainable way?
How can we feed the cities in a sustainable way?

**Context and Background**

**Methodology**

**Results**

**Discussion and Conclusion**

**Literature review**

**Food System** + **City logistics** =

- **Upstream**
  - Agriculture based
- **Logistic based**
- **Commercial based**
  - Downstream

**FOOD HUBS**
Theoretical framework

Food hub
- Food hub as a collaborative system between producer, distributor and trader eliminating middlemen (who does not add value to the final product) in order to shorten the food supply chain
- Its main objective is to strengthen the supply of agro-industrial products
- With the aim of improving urban food supply chain
Theoretical framework

Food hub elements

- Function
- Stakeholders
Theoretical framework

Stakeholders

PRODUCER

Load Generator (G)
Load Beneficiary (B)
Logistics Services Supplier (LSS)

INTERMEDIARIES

WHOLESALE

RETAILER

CONSUMER

G
B.G
B/G
B

URBAN

Results

Discussion and Conclusion

Context and Background

Methodology
Theoretical framework

Steering

Organizations Managed by

- Profit
- Non-profit
- Private
- Public
- Structure
## Theoretical framework

### Functions

<table>
<thead>
<tr>
<th>Commercial</th>
<th>Logistic</th>
</tr>
</thead>
</table>
| - Markets of local producers who provide **sales services**.  
- Retail or diversified: Activities such as wholesalers, retailers, and training, among others.  
- **Processing of convenience**: Activities that add value to the product (washing, peeling, and cutting food). | - **First mile Consolidation**: Works directly with producers to collect and store different products from various communities to centralized locations.  
- **Last mile Distribution**: They distribute products to end customers.  
- **Processing conservation**: The foods are processed with relatively complex storage conditions for product preservation including canning, pickling, and preserving in cold rooms, among others. |

### Transversal

- **Physical Services**: physical aggregation, classification, packaging, sale and delivery of products. Infrastructure area: 5,000-10,000 square feet  
- **Intangible Services**: They are specialists in coordinating, payment, marketing and product promotion. Infrastructure area: 1,000-4,000 square feet.
Feed the cities……………………………………but in a sustainable way

**Economical Impacts**
- Increase local production (Barham, 2014)
- Local job creation (Lyons, 2013) (Matson, 2013)
- Increases farmer income (Ballamingie, 2013)
- Reduces logistic costs for farmers (Barham, 2014) (Cassidy, 2014)

**Social Impacts**
- Producers’ quality of life improvement (Lyons, 2013)
- Producers training (Ballamingie, 2013)
- Promotes the availability of fresh and healthy food products (Barham, 2014) (Cunha, 2015)
- Producer is valorised (Gaskin, 2013) (Lyons, 2013)

**Environmental Impacts**
- Reduction of environmental costs for food transportation (Cassidy, 2014)
- Reduction of energy use and waste generation in the distribution process (Barham, 2014)
- Preference for the regional products grown in a sustainable way (Barham, 2014)
Case study

Corabastos → Bogota, Colombia
Case study

Corabastos → Bogota, Colombia

- Population: 9.2 millions
- 8 accessible ways
- 24/24 hours and 7/7 days logistics activities
- 200,000 tons of goods per day (IDB, 2014)
- 2,000 daily routes associated with goods transportation
Case study

Corabastos → Bogota, Colombia

- Every day:
  - 250,000 people
  - 12,500 vehicles
  - 6,500 wholesalers and retailers
  - 500 products
  - 12,400 tons
  - 40% of Colombian market

<table>
<thead>
<tr>
<th>Warehouse type</th>
<th>Number of warehouses</th>
<th>Area (m²)</th>
<th>Storage capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>6</td>
<td>400</td>
<td>51 -100 tons</td>
</tr>
<tr>
<td>2</td>
<td>26</td>
<td>225</td>
<td>Until 50 tons</td>
</tr>
</tbody>
</table>
Case study

### City Logistic solutions

**Urban Logistics Spaces (ULS)**
- Urban Distribution Centers (UDC) – Semi-private - Specific

### Food hub

**Stakeholder**
- Led by the wholesale
- Hybrid model

**Steering**
- Food Hubs in private hands
- Led by the public sector

**Fonctions**
- All commercial
- Logistic:
  - Last mile Distribution
  - Processing conservation

### Impacts

**ECO**
- Product differentiation strategies
- Development of local enterprises

**ENV**
- Generates 100 tons/year of organic wastes

**SOC**
- Employment generation
- Availability of fresh and healthy local food products.
Conclusion

- **Regarding the Food hub concept**, there is not an unified vision
- **We present** a characteristics for Urban logistics based on food hubs
- **Case study**: Illustrate the framework

Limits

- *This is a exploratory study*
- *It is necessary to analyze other case studies in different realities*
Thank you

Any question?

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Une école de l'Institut Mines-Télécom
Bibliography

**Bibliography**


Bibliography


- Morganti, E. (2011). Urban food planning, city logistics and sustainability: the role of the wholesale produce market. The cases of Parma and Bologna food hubs, PhD.


- Morganti, E., Gonzalez-feliu, J., Morganti, E., & P*, J. G. (2013). P* oles logistiques alimentaires : un nouveau concept pour l’ approvisionnement des villes To cite this version:


## Case study

### Corabastos → Bogota, Colombia

<table>
<thead>
<tr>
<th>Product relevance</th>
<th>Rate of daily sales</th>
<th>Tons sold daily</th>
<th>Products</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>33%</td>
<td>2158</td>
<td>Vegetables: Welsh onion, onion bulb, peas, corn and carrots.</td>
</tr>
<tr>
<td>2</td>
<td>26%</td>
<td>1700</td>
<td>Potatoes</td>
</tr>
<tr>
<td>3</td>
<td>25%</td>
<td>1635</td>
<td>Fruit</td>
</tr>
<tr>
<td>4</td>
<td>6%</td>
<td>327</td>
<td>Bananas</td>
</tr>
<tr>
<td>5</td>
<td>8%</td>
<td>523</td>
<td>Grains and processed</td>
</tr>
<tr>
<td>6</td>
<td>2%</td>
<td>131</td>
<td>Eggs, meat and dairy</td>
</tr>
</tbody>
</table>