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Urban-rural relations around the agri-food supply between Ocaña and the municipalities of Catatumbo, as a prospective proposal to the City-Region of Ocaña

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Abstract. The objective of the study was to identify the urban-rural relations around the agri-food supply between Ocaña and the municipalities of Catatumbo. Starting from the geographic identification, products and quantity of food that arrive at the municipal supply center to develop a cartographic representation as the prospective proposal of the City Region of Ocaña. The methodology focused first on the realization of a census in the market place and then to carry out a survey in the supply center of the city. Within the results obtained, it was possible to find that the agro-food relation of Ocaña with the municipalities of Catatumbo is composed of the following municipalities: Teorama, San Calixto, El Carmen, Rio de Oro, Otaré, La Playa, Hacarí, Gonzales, Convention, Abrego and El Tarra. This provides 88.9% of the food arriving in the central market of the city of Ocaña. With the above data, a cartography was generated in which Ocaña’s relationship with rural areas is represented, for a city-region proposal.

1. Introduction
The Catatumbo, despite the disproportionate growth of cocaine cultivation in recent years, is considered a region with agri-food importance [1-2]. The objective of the present study focused on: identifying the urban-rural relations around the agri-food supply between Ocaña and the municipalities of Catatumbo, the geographical identification of rural areas, the main agri-food products [3] and the quantity of tonnage food handled by the wholesale and retail merchants. Ocaña’s municipality supply center served as base point.

The products that make up most the wholesale market are onion, beans, tomato, pepper, cucumber, green beans and corn. The products that make up most the retail market are peas, celery, onion, guava, mandarin, pepper, tomato, cassava, green beans, avocado, banana, carrot, orange, lemon, corn, papaya, pineapple, beet, cabbage and pumpkin. With the above data, a cartography was generated in which the relationship of Ocaña with rural areas is represented, for a city-region proposal.

2. Data description
The Catatumbo region presents high levels of inequalities, comparatively, in Colombia the population considered poor by income reached 27.8% in 2015; Norte de Santander reached 40% [4]. Paradoxically, deficiencies in the provision of services are not compared to the natural resources in Catatumbo [5].
Poverty, presence of subversive groups, differential absence of the State that focuses on the presence of military and police forces, high levels of corruption, precarious access roads, poor quality in both health services and education [6]. The absence of the State has generated shortages of goods, basic services and infrastructure, generating few marketing channels for farmers in the region as well as production guarantees, in this way the cocaine business has become a source of income [7]. Historically, the Municipality has supported its economy in the comers of agricultural products produced in the municipality and in the other municipalities of the province of Ocaña, these products are consumed locally and commercialized in the Atlantic Coast and in the south of Bolivar [8].

Faced with these problems, it is noteworthy that the Catatumbo region continues its vocation as an agri-food reserve in the city of Ocaña, and neighboring municipalities such as Bucaramanga and Valledupar. The region represents 51.6% of the area planted in Norte de Santander and 46.7% of its production. [9]. The production of transitory crops are the main fragments of the agricultural economy in the region, with 32.4% composed of products such as: beans, onion, tomato, cassava, corn, rice and in smaller proportions tobacco, cilantro, cucumber, pea, chives, pepper and chili. Semipermanent crops account for 13.8% and are represented by plantain and cane. Permanent crops like the palm stands out with 21.6%, concentrating its production in the municipalities of Tibú and La Esperanza. Coffee with 15.4%, present in the municipalities of Convención, San Calixto and Hacarí as its main producers. Cocoa with a 15.1% , present in the municipalities of Teorama, El Tarra and La Esperanza. With only 1.8% of the total area of crops, are represented by fruits such as: pineapple, citrus, lulo, passion fruit, avocado and in smaller proportions banana, blackberry, tree tomato, among others [10].

3. Methodology
The research is of an exploratory-descriptive type [11], since it examines a subject with little sturdy to the extent that it has not been approached with the focused of rural urban relations between Ocaña and the Catatumbo Region at the agri-food level. On the other hand, it is descriptive [12] as it seeks to specify the agri-food interactions of the region previously mentioned, identifying geographical aspects, agri-food systems and commercialization. In order to fulfil the objective of the investigation, a census was made to the totality of merchants that commercialize in the market place of the city of Ocaña, which is the main center of supply for the city. The following results were obtained: 25 wholesalers, 38 located in the Plazuela "Cuadra del burro", 4 in the Cuento con Voz area, 39 carts in the street, 25 located in the market square.

Table 1. Wholesale results for each municipality and their products.

| Municipality | Product | Tones per year | Wholesalers % |
|--------------|---------|----------------|---------------|
| Teorama      | Onion   | 375            | 1.40          |
| San Calixto  | Beans and onion | 1257         | 4.68          |
| Rio de Oro   | Tomato  | 160            | 0.60          |
| Otaré        | Onion   | 202            | 0.75          |
| Ocaña        | Peppers and onion | 303       | 1.34          |
| La Playa     | Onion, bean, cucumber, peppers and tomato | 10272 | 38.28 |
| Hacari       | Onion   | 577            | 2.15          |
| Gonzales     | Peppers and onion | 112         | 0.42          |
| El Carmen    | Onion, beans, cucumber and tomato | 2444 | 9.11          |
| Convención   | Onion, peppers and tomato | 2617 | 0.75          |
| Ábrego       | Onion, green beans, beans, Corn, cucumber, peppers, tomato | 8484 | 31.62 |

4. Results
The results of the wholesalers can be seen below by municipality and product (See Table 1). The pathways that conform by all the municipalities are: Aguas Claras, Alto Del Pozo, Aspacicas, Bella Vista, Campanario, Capellanía, Capitan Largo, Caratoque, Astilleros, Culebrita, El Arado, El Castillo, El Chorro, El Espejo, El Hoyo, El Pantano, EL Saltadero, Estancia, Guara, Guarumo, Hurama, La Sierra, La Cuesta, La División, La Esperanza, La Estancia, La Hurama, La Labranza, La Maria, La
Mona, La Sierra, La Soledad, La Teja, La Vega, Las Chircas, Llano Suarez, Los Cerros, Los Osos, Mesa Llana, Monte, Peñitas, Rinconada, Río Frio, Sagrado, Saltadero, San Javier, Santa Barbara, Sincho, Soledad, Tierra Azul and Venadillo.

The results of the retailers can be seen below by product, tones per year of production and the municipality, percentage and pathways (See Table 2).

Table 2. Retail results for each municipality for products and pathways.

| Municipality   | Product                               | Pathways                                                                 | Tones per year | Wholesalers % |
|---------------|---------------------------------------|---------------------------------------------------------------------------|----------------|--------------|
| Ábrego        | Pea, celery, onion, white onion, red onion, chives, guava, tangerine, corn, peppers, tomato and cassava. | Paramillo, El hoyo, Soltadero, Capitanlargo, El oroque, Araganazo, Rio frio, La teja, Llano alto, Campanario, San miguel, Llano, Suarez, Casa de teja, Palma, Urama, Pavez, Sitio nuevo, San isidro, Los llanitos, Paloquemao, El potro, El rosario, Aninchilco, Mesa rica, La mesa, Guamal. | 279.55         | 6.91         |
| Playa de Belén| Pea, plum, guava, green beans, tomato and cassava. | Aspasica, Oratoque, Corral viejo, Calero, La peña, Montecito, Labranza, Carrizal, El bigeron, Curasica, Masiegas, Esmeralda. | 91.9           | 2.27         |
| El Carmen     | Avocado, onion, chives, banana and carrot. | San Francisco, Tierra Azul, Potrero Grande, Quebrada Arriba, Llaguada, Llagunita, San Vicente, La Estrella, Guamalito (Corregimiento), Santa Inés, El Torno. | 77.59         | 1.91         |
| Convención    | Orange and tomato. | Corregimiento de Soledad, Cerro Gordo. | 12.7           | 0.31         |
| El Tarra      | Banana and cassava. | Buena Vista, Torres, Bracitos. Tarra sur. | 173            | 0.31         |
| Hacari        | Onion, banana and cassava. | San Pedro, Capilla, Capellania, Platillo, Mesarica, Rebenton. | 120.46        | 2.98         |
| Ocaña         | Green bean, lemon, tangerine, corn, orange, papaya, peppers, pineapple, beet, cabbage, tomato, cassava and carrot. | Palo Grande, La Madera, La Concepción, La Rinconada, Portachuelo, Buenavista, Pueblo Nuevo, Otare, La Pial, Llano Verde. | 392.77        | 9.71         |
| San Calixto   | Tomato, pumpkin, cassava and avocado. | Balsamino, Potrero Grande, Marina, Lagunitas, Mesa Llana. | 11.64          | 0.28         |
| Rio de Oro    | Cassava and tomato. | La Maria, Arado, Carpintero, Lajas, Sumare, Salobre. | 8.08           | 0.19         |
| Teorama       | Tangerine, Pineapple, Avocado, Tomato, Orange and Lemon. | Miracote, Altarasia, Ucal, El Oso. | 131.70        | 3.25         |
| Gonzales      | Pumpkin, onion, banana, lemon, corn, orange, peppers and tomato. | Viejo Gal, Quebrada Estancia, Salobrito, Sal Isidro. | 61.88         | 1.53         |
| Cesar y Bolívar| Avocado, pumpkin, coconut, papaya, banana, cassava and sapodilla. |                                                                      | 789.25        | 19.52        |
5. Discussion

Once the tones and municipalities were identified, the first cartographic approach was carried out, centered on the percentage of food tones per year, from the surrounding municipalities of the city of Ocaña (See Figure 1).

![Figure 1. Percentage of food production by a municipality that reaches the city of Ocaña’s central market.](image_url)
The pathways that form Ocaña’s agri-food supply were identified, to know which areas would be the ones that the Ocaña Region City should set policies and present remuneration for agri-food services around ecosystem conservation, roads, technical assistance, credit counselling, among others. (See Figure 2).

Figure 2. Specific areas of food production that reach the municipality of Ocaña central market.

The cartographic proposal allows us to understand the relationship of Ocaña with its region with a view to the construction of Ocaña’s City-Region. Understanding that the interactions that exist with other municipalities and their rural areas build the urban centers, are the driving forces of the economy and make part of the culture with the typical dishes that give territorial identity. The supply of agri-food cannot be seen with a simplistic characterization, as only food, it is necessary to understand that food is an inherent part to the construction of city.
6. Conclusions
The Catatumbo region despite the dynamics of armed conflict, absence of the social state of law, increase of illicit crops in the region, it continues being a food producing area. In the case of Ocaña, the reception of food in the Trade Sector is 30,877.67 tonnes per year. The products that the Wholesalers handled are: onion, beans, tomatoes, pepper, cucumber, green beans and corn, highlighting the municipalities of Carmen, Convención, with 9.0% on average, Ábrego and La Playa de Belén with a 30.0% as the most important municipalities. With the retail market the most relevant products are peas, celery, onion, guava, tangerine, corn, papaya, pineapple, beetroot, cabbage, smoked, with 33.6% coming from the region surrounding the city of Ocaña.

The agro-food relationship of Ocaña with the municipalities of Catatumbo is composed of the following municipalities: Teorama, San Calixto, El Carmen, Rio de Oro, Otaré, La Playa, Hacarí, Gonzales, Convención, Ábrego and El Tarra. This provides 88.9% of the food arriving in the central market of the city of Ocaña showing a close relationship between the city and its region.

The Ocaña Region city proposal focuses on the relationships that are woven in the territory, in this sense, agri-food relations were used to identify the regions that supply the city. Agri-food supply is a fundamental part of the city forcing it to look at rural areas, recognize its commitment to the territories, and understand them as a constituent part of it.

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