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Sharing water: managing water use conflict and building relationships, the case of the city of Brazlândia - Descoberto Basin

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Introduction

With the implementation of new state and national water resources policies in the 1990s, the resolution of conflicts over the use of water in Brazil has become the subject of alternative models of water allocation and management, with participatory characteristics (Freitas & Lopes, 2007). Water allocation is the establishment of rules for the use of water resources in order to carry out its distribution among users, for a certain period of time, negotiated between the government, shareholders' representatives and users. In the Brazlândia region the conflict over the use of water and the interruption of supply to the city has happened frequently in recent years. The city of Brazlândia has approximately 54 thousand inhabitants. Its rural area stands out for having highly developed rural activites and for being an important producer of fresh food, one of the largest producers of vegetables and fruits in the Federal District. The same three streams supply both: Brazlândia and its rural area. The **Water Enhanced Sharing Project** intends to implement water allocation actions in the basins that present conflicts over water, and establish parameters lower than those determined by law. The processes have the participation of the government – Adasa – and of water stakeholders, particularly the concessionaire for public supply and farmers.

Methodology

Initially, a project management commission is formed, with representatives from Adasa, the concessionaire and the rural development company. Then, campaigns are carried out to register the water users in order to know the uses of water in the basin. Meetings are to be held with users of each region, and a committee is set up to follow up the actions, including in this committee some farmers. The monitoring committee mainly meets during times of water scarcity, at which Adasa and the concessionaire show the data on the flow in streams of interest for human consumption and irrigation; based on that data, water allocation proposals are made. The proposal validated by Adasa and by the monitoring committee is then communicated to all the users of the basin.

Figure 1. Comission with representatives from Adasa, rural development company and water users.

Discussion and Results

The campaigns happened in 2015 and beginning of 2016, it was possible to quantify and qualify the types of interventions that exist in this sub-basin of the streams that supply Brazlândia city. It was identified along the streams 52 users. After the monitoring committee formed, the negotiated allocation aimed to reduce the use and to reorganize certain times due to the occurrence of supply interruption peaks at 10 am, 4 pm and 11 pm, in the month of September of 2016.

USER	TIME USED TO COLLECT FROM THE STREAM	TIME ALLOCATED TO COLLECT FROM THE STREAM August 3, 2016	TIME ALLOCATED TO COLLECT FROM THE STREAM September 16, 2016
User 1	MORNING: 6 am-10 am	MORNING: 7 am-10 am	MORNING: 7 am-10 am
	AFTERNOON: 1 pm-5 pm	AFTERNOON: 1 pm-4 pm	AFTERNOON: 1 pm-4 pm
	NIGHT: 6 pm-10 pm	NIGHT: 6 pm-10 pm	
User 2	MORNING: 6 am-7:30am	MORNING: 6 am-7:30am	MORNING: 6 am-7 am
	AFTERNOON: 1 pm-5 pm	AFTERNOON: 1 pm-4 pm	AFTERNOON: 1 pm-4 pm
User 3	MORNING: 6 am - 8 am	MORNING: 7 am -9 am	MORNING: 7 am -9 am
	AFTERNOON: 1 pm-3 pm	AFTERNOON: 2 pm-4 pm	AFTERNOON: 2 pm-4 pm
User 4	NIGHT: 6 pm-8 pm (Reservoir)	NIGHT: 6 pm-8 pm (Reservoir)	MORNING: 6 am-10 am (Reservoir) They use the same reservoir
User 5	NIGHT: 6 pm-8 pm (Reservoir)	NIGHT: 6 pm-8 pm (Reservoir)	
User 6	MORNING: Tomato farm irrigation at any time	MORNING:9 am -10:30 (Tomato farm irrigation)	MORNING:9 am -10:30 (Tomato farm irrigation)
	MORNING AND AFTERNOON: Twice a week, irrigates lemon orchard	MORNING AND AFTERNOON: Irrigate the lemon orchard on Tuesdays and Wednesdays	MORNING AND AFTERNOON: Irrigate the lemon orchard on Tuesdays and Wednesdays
	NIGHT: 6 pm - 8 pm (Reservoir)	NIGHT: 6 pm - 8 pm (Reservoir)	NIGHT: 6 pm - 8 pm (Reservoir)
User 7	NIGHT: 6 pm - 8 pm (Reservoir)	NIGHT: 6 pm - 8 pm (Reservoir)	NIGHT: 6 pm - 8 pm (Reservoir)

Table 1 - Allocation schedule negotiated with users.

According to information from the concessionaire, a flow rate of 80 L / s (eighty liters per second) ensures that the dam keeps the quota of 0.8 meters, which is the minimum height required for the operation of the pumping system. Water allocation strategies carried in a participatory manner, since the month of August, ensured the arrival of a flow rate of 80 L / s (eighty liters per second) at the point of catchment (Figure 1), which was not happening in previous years, when the interruption of catchment and supply to the city of Brazlândia was needed for a few days, when the levels of streams decreased. In other words, the strategy adopted has ensured both the water supply to the city and the continued irrigation by local farmers, even at an advanced stage of water scarcity; in a period when use priority would be to ensure water supply to the city.

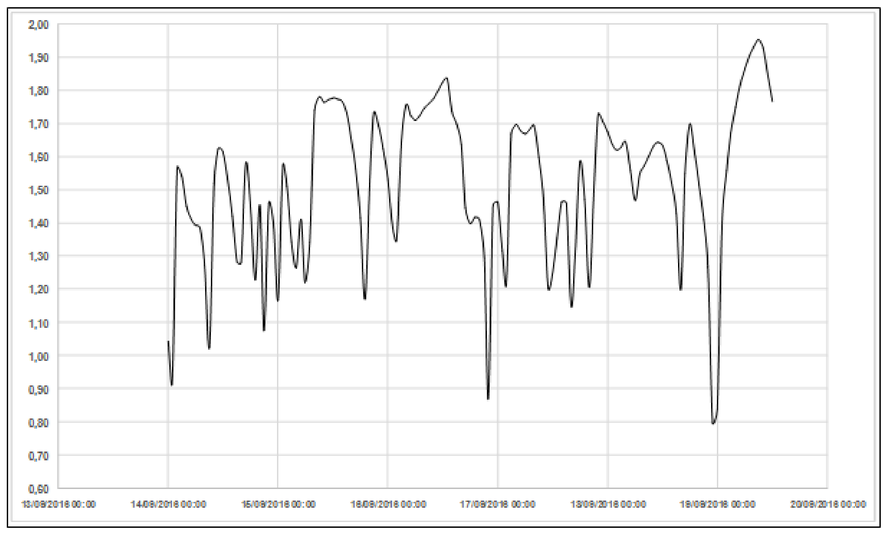

Chart 1 - Height (quota) in meters of water level in catchment dam in the period of September 14-20 (chart provided by Caesb).

Final considerations

The actions and proposals for shared use were developed through discussions and negotiations between water users and Adasa, decentralizing the decision-making process and empowering stakeholders with social participation in the management of water resources. We can infer that the knowledge obtained with this experience can be used in other parts of the Descoberto Basin during the dry season. Thereby, it would be possible to increase the water availability of the tributaries of Lake Descoberto and ensure the multiple uses of water.

References

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