



Hydric deficit and socioeconomic impacts on irrigated fruit production in Brazilian semiarid region

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During many decades, this region (semiarid) was pointed out as a marginal zone for agriculture practices regarding to the low level and irregular rainfall distribution and high evapotranspiration rate. Under normal conditions, the rainy season happens during four months of the year, with pluviometric average of 400-600 mm. The agriculture based only on rainfall conditions suffers from harvest frustrations. After the 1980s, the federal government implemented several irrigation projects, especially fruit production, generating significant social and regional economic transformations. Among these projects, it is worthwhile to mention São Francisco river Valley (Juazeiro and Petrolina in Bahia and Pernambuco states, respectively), Formoso project in Bom Jesus da Lapa (Bahia state), Jaíba, Pirapora and Gortuba projects (North of Minas Gerais state), Gavião river Valley and many others. Most of the agricultural production originated by these projects aims the domestic and international markets. From 2012 until now, there was a significant rainfall reduction in different Brazilian regions, affecting strongly the population as well as the irrigated agriculture. Many rivers and dams had their volumes of water reduced, as the Contas River dam in Bahia state; in this region many mango tree orchards from Livramento de Nossa Senhora project were abandoned and ripped out in 2014; more than 5.000 hectares of passion fruit tree were abandoned in Dom Basílio county from 2012 to 2013, moving the production of this Passifloraceae to another region. In Lapão county, Irecê region in Bahia state, the water used for irrigating hundreds hectares of custard apple (*Annona squamosa* L.) from tubular wells, which was legally forbidden in order not to affect human supply. In North of Minas Gerais state, water level from Gortuba dam in Janaúba county lowered to minimum percentages; the same happened to tubular wells used to irrigate orchards of banana and many other cultivated fruits. Many other states from Brazilian Northeast were severely affected by the drought since these past three years in the irrigated or not irrigated agriculture. Facing this scenario, alternatives are needed for better conservation and use of water: relevant measures to preserve the headwaters of rivers and their runnels, more efficient use of irrigation systems, water reuse, greater control over water use and educational campaigns in urban and rural areas. The implementation of these measures is important for preventing serious economic, social and environmental damage, both for human consumption and for food production.

Key words: rainfall, drought, sustainability, irrigation.