

AGROECOLOGICAL ZONING (ZAES)

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Agroecological Zonings (ZAES) are multi-thematic planning instruments whose main objective is to plan land use according to the sustainability criteria. They include information on soils, land use and coverage, climate, pedological crop potential, climate suitability by crop, soil potential for crops, land potential for irrigation, agroecological potential of land, water resources, among others. The theme that deserves to be highlighted is the soil survey, as it constitutes the “backbone” of the ZAES. It deals with pedological cartography individualizing mapping units and their environmental peculiarities. That is why, it is the theme that supports all the pedological interpretations that make up the ZAES. Integrated into a GIS, the set of themes allows quick consultations facilitating decision making by users. The ZAES make it possible, on the one hand, to reduce the risks inherent in agricultural production, and on the other, to increase crop productivity gains. Recent studies suggest that for every R\$ 1.00 invested in the ZAES, it is possible to recover R\$ 12.60 in benefits for society.

RESULTS

The main results of the ZAES, covering the Atlantic Forest, Caatinga and Cerrado biomes, are maps and explanatory texts, especially on the pedoclimatic potential and land for irrigation. Such results can enable strategic interventions aimed at developing the rural environment on a sustainable basis. An integrated notion of the Northeast region of Brazil, including the north of Minas Gerais, was obtained through the Northeast Agroecological Zoning (ZANE) (SILVA et al., 1993). At the state level, the main ZAES carried out on a scale of 1:100,000 were the Pernambuco Agroecological Zoning (ZAPE) (SILVA et al., 2001) and the Alagoas Agroecological Zoning (ZAAL) (SANTOS et al., 2013). On a municipal scale (1: 50,000), the Zoning of the Pedoclimatic Potential of the Area of Influence of the Coastal Lands of the Paraíba Channel (ZON-PB) (Table) In ZAPE, cotton crops were zoned, at two technological levels (medium and high technologies) and in three climatic scenarios (dry, regular and rainy years), cotton crops herbaceous, arabica coffee, sugar cane, common beans, cowpea beans, castor beans, cassava, corn and sorghum. ZAAL was similar to ZAPE, except coffee. An

example of the pedoclimatic potential for sugarcane can be seen in the Figure. In ZON-PB, the crops to be zoned will be corn, sorghum, sugar cane and pineapple. Recent studies carried out by Embrapa Solos indicate that the ZAES, if well used, bring a return of more than 10 times on the investments for their realization. In the specific case of ZAAL, it was estimated that for each R\$ 1.00 invested, R\$ 12.60 in benefits for society can be recovered. The ZAES also facilitate the implementation of agricultural technologies available according to the zoned environments, such as underground dams, ICLF, among others. By considering different climatic scenarios, the ZAES also make it possible to use land while taking climate change into account. The target public of the ZAES mainly covers users from the agricultural and environmental sectors.

NEXT STEPS AND RECOMMENDATIONS

- Update of the ZAES and publication in WebGis to facilitate public access; and
- Completion of the ZON-PB project.

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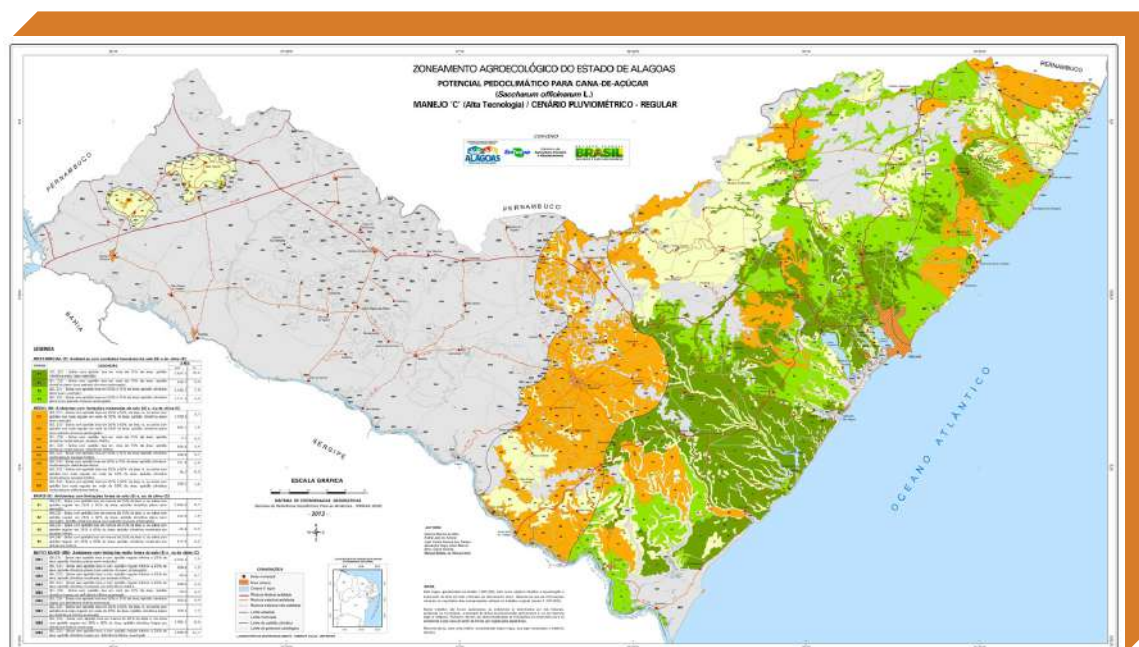
Table 1: Agroecological Zonings (ZAEs) in Northeast Brazil

Project (ZAE)1	Scale	Disclosure	Financing	Publication
ZANE	1:2,000,000	Books and CD-ROM	Embrapa/ Sudene	1993
ZAPE	1:100,000	CD-ROM	Government (PE)	2001
ZAAL	1:100,000	DVD	Government (AL)	2013
ZON-PB	1:50,000	WebGis	Government (PB)	In progress

Caption: 1ZANE: Agroecological Zoning of the Northeast; ZAPE: Pernambuco Agroecological Zoning; ZAAL: Alagoas Agroecological Zoning; ZON-PB: Zoning of the Pedoclimatic Potential of the Influence Area of the Coastal Strands Channel of Paraíba.

Source: Authors.

Figure 1: Pedoclimatic potential of sugarcane crop in the state of Alagoas in soil management with high technology and climatic scenario for regular years



Crédit: Santos et al. (2013).