INFLOR PROJECT

Local resources for infant food security based on agro-ecological conditions: a case study from Benin

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Research questions

Infant malnutrition ensues from the inadequacy of complementary foods and the nutritional needs of children during the weaning process. In low-income countries such as Benin, many mothers are unable to afford the cost of good quality infant meals. A way to address this issue is to make better use of local food resources. What are the main plant and animal species that have to be taken into account in infant food formulation in agroecological zones (AEZ) of Benin? How may the food formulation be done according to AEZ?

How did we conduct the study and what did we find?

❑ **Method 1**: A comprehensive literature review was conducted from May to October 2015, on local plant and animal resources used for feeding infants and young children across the AEZ of Benin (Figure 1).
Result 1: From this review, we found out **34** most nutritious local resources in the country with a special focus on protein and micronutrients.

❑ **Method 2**: A survey on 969 participants in **42** villages of 8 AEZs of Benin was carried out. The data collected from focus group discussions and individual interviews were related to the availability of local food resources, their modes of utilization in infant feeding practices, and processing techniques.
Result 2: We found disparities in the distribution and use of local food resources for infant foods in the AEZs. AEZ 1 and AEZ 2 had the lowest diversity of local food resources used in children's feeding, while AEZ 5 and AEZ 8 had the highest diversity. Some species were only met in a given AEZ (Table 1). The baobab tree (*Adansonia digitata*) and groundnut (*Arachis hypogea*) are the plant resources recording the highest number of usages. Photo 1 presents the third ones for plants and animals.

❑ **Method 3**: A description of similarities and differences among the AEZs was done to point out possibilities for infant food formulations at AEZ level.
Results 3: High similarities in the species used for infant food exist between AEZ 5, 6, 7 and 8 whereas AEZ1 and AEZ4 have no match with resources used for infants. in the other AEZs (Figure 2).

Table1. Species specific to AEZs

| AEZs	Species
AEZ 1	*Curcubita maxima*, *Detarium microcarpum*, *Sesamum* sp., *Fato-faro*, and *Gari* (in dendi local language)
AEZ 2	None
AEZ 3	*Diospyros mespiliformis*, *Boerhavia diffusa*, *Corchorus trilocularis*, *Sesamum radiatum*, and *Sowan* (*bourou*) (in dendi local language)
AEZ 4	*Cissus sokodense*, *Cola nitida*, *Hibiscus acetossela*, *Adjomana+* (in *nateni* local language), *Morsi johumba+* (in *yindé* local language),
AEZ 5	*Caesalpinia bonduc*, *Dioscorea* sp., *Oryza sativa*, *Uvaria chamae*, *Dowèviko+* (in *adja* local language)
AEZ 6	*Abobi+* (in *adja* local language)
AEZ 7	*Alternanthera brasiliana*, *Sterculia tragacantha*, *Synsepalum dulcificum*, *Telfairia occidentalis*, *Noukoudotokpa+* (in *fon* local language)
AEZ 8	*Alternanthera sessilis*, *Jatropha curcas*, *Khaya senegalensis*, *Cyprius carpio*, *Heterotis niloticus*, *Azlélé+* (in *wémè* local language)
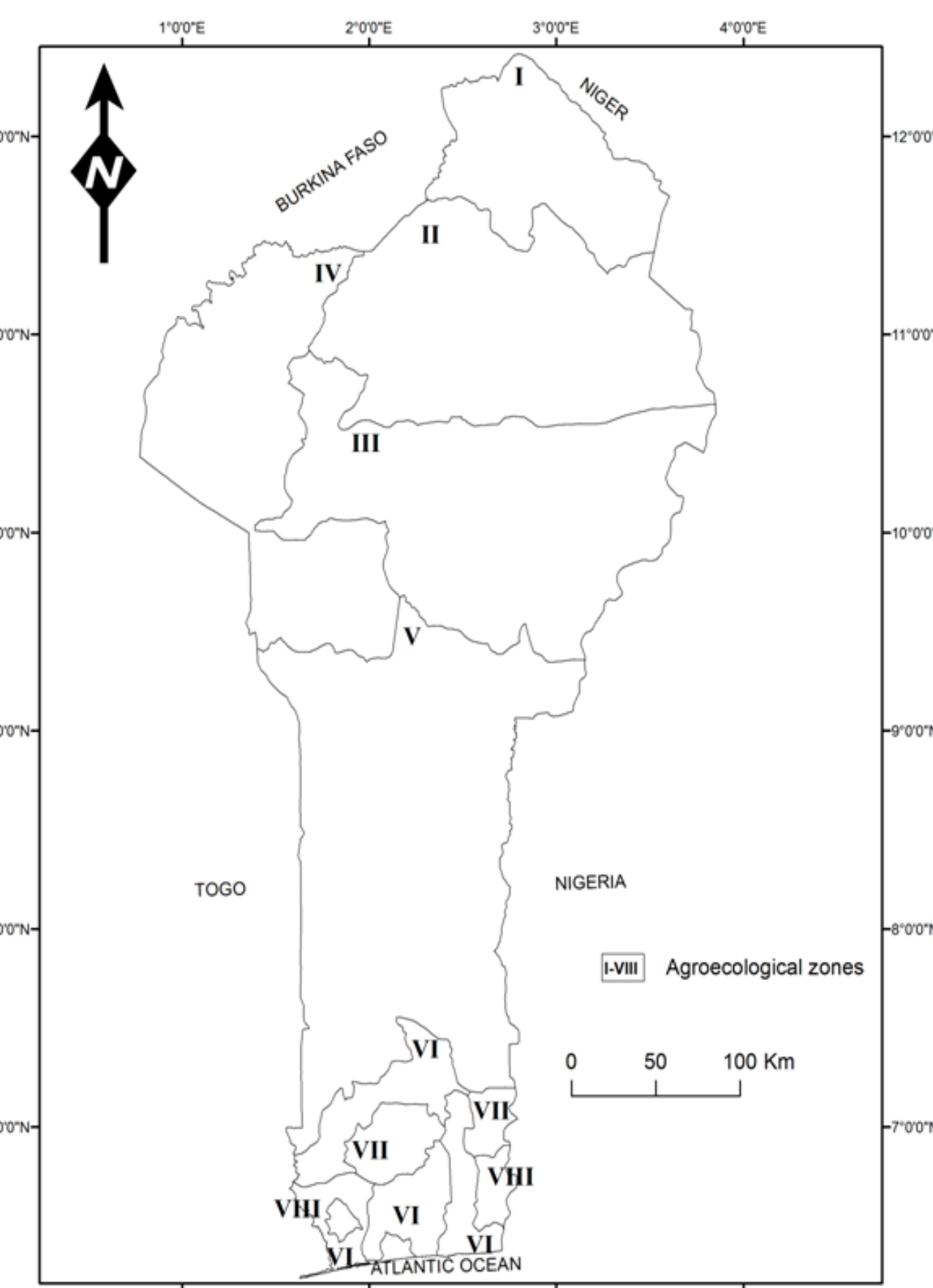
Figure 1. Agro-ecological zones of Benin

Plant species

Photo: © Chadare, Karimama (Benin), Août 2015
Adansonia digitata

Arachis hypogea

Hibiscus sabdariffa

Animal species

Photo: © Chadare, Karimama (Benin), Août 2015
Gari (*dendi*)

Adjomana (Fon)

Dowèviko (*Adja*)

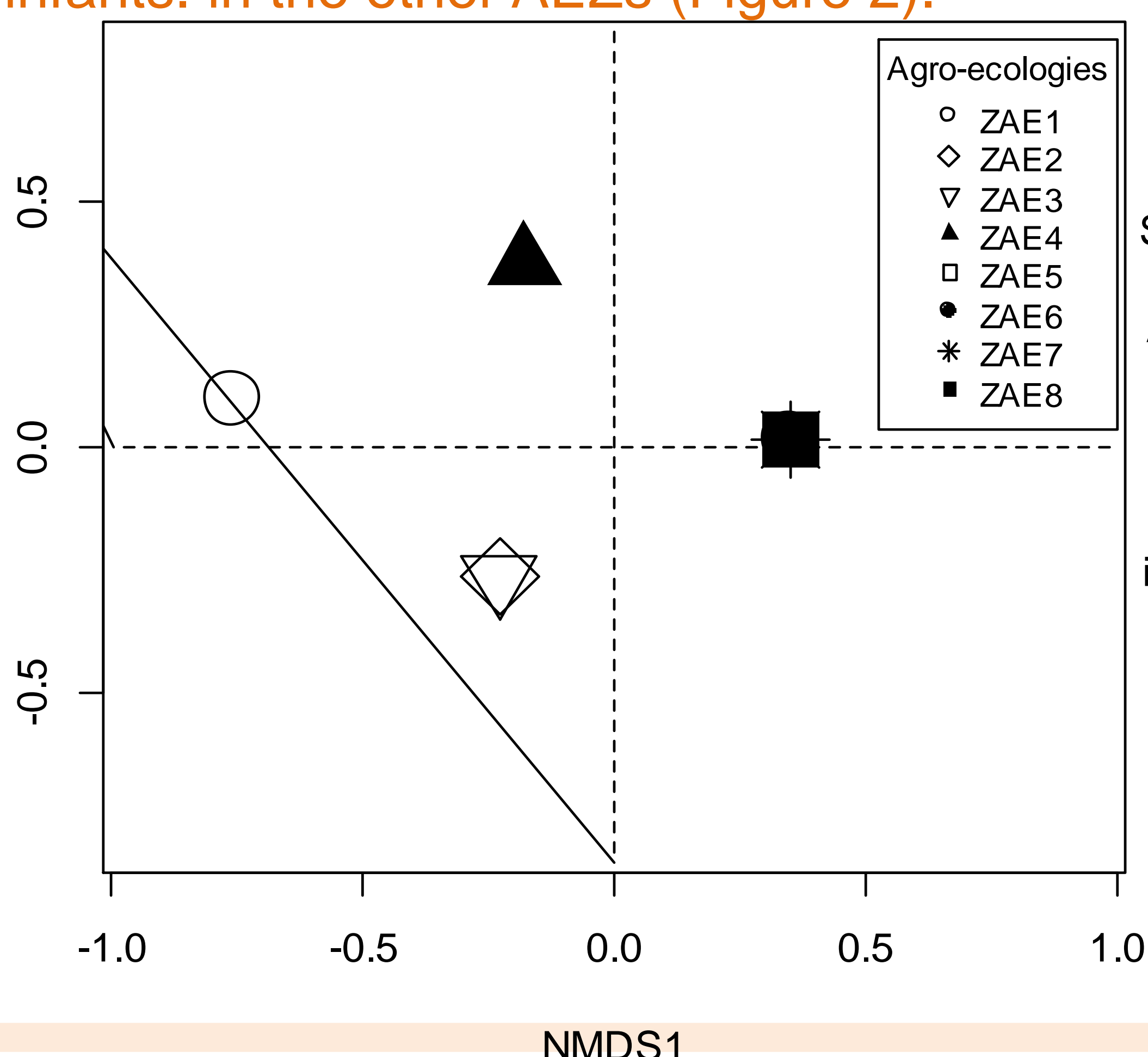**Photo 1.** Most important species used for infant food in AEZs

Figure 2. Similarities between AEZs with respect to food species used for infant food

Agro-ecologies	
○	ZAE1
◇	ZAE2
▽	ZAE3
▲	ZAE4
▢	ZAE5
●	ZAE6
✳	ZAE7
■	ZAE8

Concluding remarks

❑ From one AEZ to another, food resources varied in their diversity as well as in the way in which they were used in the feeding of children.

❑ These dissimilarities were linked, on the one hand, to agro-ecological conditions and, on the other hand, to the know-how of local communities in relation to these local food resources.

❑ Similarities of AEZs in terms of species used for infant feeding, as determined in this study, suggest to formulate infant foods for AEZs which have common species , i.e. one formulation for AEZ 1 and 4; and one formulation for AEZ 5, 6, 7 and 8.

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