

Appendix D: Land-use scenarios

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In order to test the feasibility of three general archaeological hypothesis regarding first-millennium land use in the Rhine-Meuse delta, the presented PLUS calculates 20 land-use scenarios in six scenario groups:

Table D.1 | *Overview of simulated scenarios applied in the study.*

Hypotheses	Scenario group	Chronological time frame	Land-use scenario number(s)	Description
Hypothesis 1	Scenario group 1	First millennium (ERP-EMPD)	1-7	Minimum number of settlements provided locally produced food to military sites and large settlements
	Scenario group 2	First millennium (ERP-EMPD)	8-14	Maximum number of settlements provided locally produced food to military sites and large settlements
Hypothesis 2	Scenario group 3	ERP-MRP	15-16	Maximum number of settlements provided food for military sites and large settlements
	Scenario group 4	ERP-MRP	17-18	Minimum number of settlements provided locally produced food to military sites and food supply of large settlements was 100% imported
Hypothesis 3	Scenario group 5	EMPC	19	Maximum number of settlements provided 50% locally produced food to Dorestad and the remaining 50% required by Dorestad was imported
	Scenario group 6	EMPC	20	Maximum number of settlements were self-sufficient in terms of locally produced food and 100% of the food required by Dorestad was imported.

Minimum number of settlements = the present number of excavated settlements in the study area (see main text: Section 4.1.). Maximum number of settlements = the number of excavated settlements plus the number of probably undiscovered settlements (50%; see main text: Section 4.1).

Each individual simulation was linked to a suitability map based on one of three palaeogeographical reconstructions: AD 100, 500, or 900. Table D.2 shows an overview of each simulated scenario.

Table D.2 | *Periodic, palaeogeographical, and settlement-patterns pecification of each individual simulated scenario.*

Land-use scenario #	Period	Description	Palaeogeographical reconstruction
1	ERP	Minimum number of settlements provided locally produced food to military sites and large settlements	AD 100
2	MRP	Minimum number of settlements provided locally produced food to military sites and large settlements	AD 100
3	LRP	Minimum number of settlements provided locally produced food to military sites and large settlements	AD 500
4	EMPA	Minimum number of settlements provided locally produced food to military sites and large settlements	AD 500
5	EMPB	Minimum number of settlements provided locally produced food to military sites and large settlements	AD 500
6	EMPC	Minimum number of settlements provided locally produced food to military sites and large settlements	AD 900
7	EMPD	Minimum number of settlements provided locally produced food to military sites and large settlements	AD 900
8	ERP	Maximum number of settlements provided locally produced food to military sites and large settlements	AD 100
9	MRP	Maximum number of settlements provided locally produced food to military sites and large settlements	AD 100

10	LRP	Maximum number of settlements provided locally produced food to military sites and large settlements	AD 500
11	EMPA	Maximum number of settlements provided locally produced food to military sites and large settlements	AD 500
12	EMPB	Maximum number of settlements provided locally produced food to military sites and large settlements	AD 500
13	EMPC	Maximum number of settlements provided locally produced food to military sites and large settlements	AD 900
14	EMPD	Maximum number of settlements provided locally produced food to military sites and large settlements	AD 900
15	ERP	Maximum number of settlements provided food for military sites and large settlements	AD 100
16	MRP	Maximum number of settlements provided food for military sites and large settlements	AD 100
17	ERP	Minimum number of settlements provided locally produced food to military sites and food supply of large settlements was 100% imported	AD 100
18	MRP	Minimum number of settlements provided locally produced food to military sites and food supply of large settlements was 100% imported	AD 100
19	EMPC	Maximum number of settlements were self-sufficient in terms of locally produced food and 100% of the food required by Dorestad was imported.	AD 900
20	EMPC	Maximum number of settlements were self-sufficient in terms of locally produced food and 100% of the food required by Dorestad was imported.	AD 900