Land, rain and sweat: Building a database of what we need for building a temporally dynamic and a spatially-explicit agent-based model of Neolithic occupation in Languedoc-Roussillon, France
Mehdi Saqalli, Marie-Alexandrine Sicre, Odile Peyron, Pierre Sabatier, Nathalie Combourieu-Nebout, Laurent Dezileau, Matthieu Ghilardi, Catherine Kuzucuoglu, Maria-Angela Bassetti, Boris Vannière, et al.

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Land, rain and sweat: Building a database of what we need for building a temporally dynamic and a spatially-explicit agent-based model of Neolithic occupation in Languedoc-Roussillon, France.

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Objectives and challenges

Building a dynamic and spatially-explicit model is an interesting way for combining altogether:
- At the operational scale, meaning the Neolithic family level, i.e. one hectare and one season
- All the biophysical and socio-economic constraints and assets this family face
- Along the period and the site we considered, meaning the Landouessou Roussillon during the Neolithic era

⇒ for such a model, we need to collect accurate data, meaning:
- Precise enough, exhaustive both temporally and spatially
- Relevant, meaning having a defined impact on simulated dynamics

Reconstitute the 1-ha territory during the Neolithic era

Reconstitute the season-level climate along the Neolithic era

Formalize the Neolithic manpower conditioned cropping system

Formalize the Neolithic livestock-keeping system

A long-term project to build within the PALEOMEX research group

Among all data and groups of data needed for building a socially-defined multi-agent model, few are available or not-so-hard to prepare:
- The white numbers (from 1 to 15) are the data or metadata available in the PALEOMEX team or that can be constructed by one PALEOMEX member;
- The black numbers (from 1 to 15) are the ones not available for now. Their construction need a consensual agreement of several working hypotheses on their values and organizations

References

Chayanov, 1925; Kuzucuoglu (2014); Appel & Dubouloz (2003); Todd (2011)

1. GIDEUM UMR 5661 CIRAD, Université de Toulouse-3 Jean Jaurès; 2. LOCEN, Sorbonne université; 3. ISEM, Montpellier; 4. LERMA, Dijon; 5. LERMA, Montpellier; 6. OLMES, UMR 7366, CNRS - Université de Limoges; 7. LERMA, UMR 5554 - Université de Poitiers Est; 8. LERMA, UMR 5510, U.C.R. - Université de Franche-Comté, Besançon; 9. UMR 7266, INRAE, Université de Lille; 10. LERMA, UMR 5554, Université de Genève; 11. UMR CNRS 7277 - Université de Lorraine; 12. LERMA, Université de Poitiers Est.