

# Research brief for the Bonn equity and climate workshop (15 May 2017)

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## **Proposal:**

When discussing social equity, or in most cases, social inequality in the context of climate and environment changes, large space and time scales are necessarily to be set. Archaeologists and anthropologists went deep into the roots and determinants of inequality, looking at the emergence of inequality from an evolutionary point of view. Here the potential impact of climate-driven environmental change on ancient societies, and the capability of these societies to successfully deal with these impacts, as well as the social inequality in relation to natural stresses are essential issues.

Access to natural resources can have important implications for social inequality. Depending on the type of resource and on the access regime, natural resources can be an income source of last resort or concentrated in the hands of privileged owners. There seems to be a consensus that defensible resources and institutional structures allowing for intergenerational wealth transmission are decisive for explaining the emergence of inequality, but other determinants like technological change, population pressure or ecological influences seem to be more controversial. A systematic investigation of how different types of access regimes to natural resources could be highly valuable.

While modern economic literature largely confined inequality to wealth and income in monetary terms, the concept of capabilities as the relevant dimension of inequality is essential in the study of times when a common medium of exchange was not widely in use. In addition, theories about the impact of inequality range from praising inequality as the main trigger of efficiency, innovation and growth, to blaming inequality as the main cause for famine, diseases as well as conflict and violence, also to a median position by arguing for an inverse U-shape relation between growth and inequality.

Thus, studies in this field are facing challenges regarding the emergence, determinants, measurement, evolution and consequences of inequality. Potential questions to be answered are:

1. Emergence: What is the role of climate and environment factors in triggering inequality at a relatively simple (archaic) social system?
2. Determinants: does inequality increase with tightening resource constraints, with population pressure, or innovation waves? What are underlying incentives to motivate and to accept concentration of power and assets under different conditions?
3. Evidence and measurement: which proxies can be used for inequality measurement? How can the evidence be made comparable across space and time?
4. Consequences: does increasing inequality lead to shortening life expectancy, diseases, conflict and violence? Is inequality of a certain degree a necessary precondition of innovation and growth?

We use archaeological and historical records to identify proxies and indicators for the distribution of assets and power. For pre-historic times, prestige objects, power signals, hierarchical positions and documented values of assets, revenues and expenditures could be scrutinized. One of our expertises is in economic methods: We use game theory to study social dilemmata, incorporating recent progress in behavioral economics, in particular in understanding reciprocity. We also apply individual-based models in explaining the emergence, evolution and persistence of cultures and institutions that lead to and stabilize inequality.