Kiel SACC Summit Statement Social Archaeology of Climate Change

SACC is an independent group of researchers working on climate change in the past constituted in Kiel. The aim of SACC is to bring together international scientists and representatives of important international organisations in the fields of archaeology, paleoecology and heritage management to discuss and evaluate the contribution of archaeological and paleo-ecological research to understand the link between social, cultural, ecological and climatic change; and to highlight how archaeology, through the study of past adaptive behaviour, is able to enhance socio-ecological resilience of societies as well as their adaptive capacity to current climate change; furthermore, to contribute to the understanding of the impact of climate change on archaeological and heritage sites as well as on cultural landscapes, museums, collections, and archives.

SACC will hold its summit every second year with a declaration at the end of each summit. SACC is organized by a steering committee chaired by the SACC 1 organisers.

Archaeology deals with human history since the very first emergence of humans. Archaeologists study the development of human societies and their interaction with the natural environment in very different historical and ecological contexts. Industrial societies are examined as are foragers or small early agrarian societies. Archaeology covers societies that first developed metal production as well as those with a diversified manufacturing system based on specialists. Non-state societies and those with first or already developed state structures are examined. Such societies are studied against the background of the most diverse ecological zones of the world, from arctic to tropical areas, from deserts to wetlands, and from inner terrestrial areas to remote islands. Archaeologists thus gather knowledge about human agency and responses to societal and environmental change not only over decades and millennia, but also in a wide variety of human and ecological contexts.

Archaeologies have a unique, deep-time perspective which can thus contribute to answering fundamental questions about how climate change affects human societies and how human societies
adapt to climate change. With appropriate contributions and in interaction with other sciences, archaeology is able to provide data for an improved modelling of this dynamic due to its long-term perspective, usually in hundreds or thousands of years. For archaeology, the goal not only must be to better integrate the diversity of environmental data with our individual archives, but also to include the divergent status of different regions of the world on the agenda. Different model applications should be operationalized for different questions in order to more intensively develop a global perspective from the mostly still regional studies.

With the data and analyses already currently available, we observe adaptations and responses to climatic changes and environmental developments over millennia. Thus, archaeology already contributes answers on questions of how do humans behave in reaction to a changing climate; when and why they react, and to what effect? When did resilient structures develop and when was this not the case?

From an archaeological perspective, a tendency becomes historically tangible that suggests a connection between sustainability and social stratification. Apparently, societies with lower social stratification have a greater chance of developing forms of sustainability that can mitigate climatic stress.

The studies available thus far show a threshold with regard to the degree of social differentiation of a society, from which the actors become capable of acting or from which such a capacity to act no longer exists. Both local and regional studies on prehistory show that when societies become disconnected due to conflicts over a divergent access to resources, this leads to reduced economic productivity, which in turn can affect demographic factors. This, in turn, results in a reduction of the possibilities to develop sustainable structures and to create conditions for resilience to climatic changes.

From the vantage point of archaeological evidence, there are clear tendencies that highlight how demography, social stratification, and resource management are significantly interlinked. A key lesson of research informing this statement is that generalizations about society and climate change need to factor in variability across the planet’s biomes. Among the insights that emerge is that demography, social stratification, the organization of labor division, play important roles in developing forms of sustainability. Once demography is held constant, studies available suggest a threshold exist with regard to the degree of social differentiation of a society, and how it impacts the way actors are capable of acting in relation to climate change.

Archaeologically, it becomes clear that the organization of resource management has varied greatly in the past – from societies with sustainable management to those that must leave settled places after several generations. It remains striking how dependent positive resource management is on the social constitution and the ability of societies to integrate. Societies with large social differences and the non-integration of internal groups, but also neighboring groups, are mostly less capable to operate a resource management system that enables resilience to environmental changes.

From an archaeological perspective, we realize that the effects and reactions to global climatic changes vary locally and regionally. We acknowledge that neither short-term events nor climatic change lead to abrupt societal changes. Instead, in well-designed case studies, we recognize a longer-term impact and response to drastic climate events, which always become visible as a socio-environmental combination of factors and reactions.
In numerous (pre-)historical societies, we recognize an increase in food variability in, among other things, climatically induced crisis situations in order to be able to fall back on alternative food sources in the event of the failure of one food source. Diversification of food acquisition is a principle method for coping with crises. The archaeological record is also pregnant with evidence for the ways in which societies alter their environments creatively, in some instances increasing the ability and resilience of food production. In this vein, archaeology not only documents the effects of climate change on past societies but also how human creativity and agency have transformed the trajectory of coupled socio-environmental systems enduringly.

Many of today’s militaries have factored climate change into their models of potential global conflict. This is in recognition of the potential shift in key resources and space accompanying climate change that may marginalize some polities while benefitting others. Historical and archaeological studies demonstrate that competition over resources may not only lead to intersocietal conflict, but that this process may alter entire landscapes as communities strive to accommodate their access to resources and the need for defense. The archaeological record also gives us a benchmark for comparing past climate changes, and the social changes they generated, with those that can be modeled for future climate scenarios. This is a sobering exercise that shows that under “business-as-usual” conditions, the geographical position of the temperature niche long favored by human populations is projected to shift more over the coming 50 years than it has moved for the last 6000 years.

Mobility is part of the basic pattern of human societies. Even in sedentary societies, between 5-30% of the population change their place of residence at least once. In this respect, mobile relationships can be seen as a basic practice of human societies. Forms of mobility also include involuntary forms. We can observe “climate migrants” at various times in world history. This also includes refugees fleeing violence that can be directly traced to conflicts over climatically reduced resource availability. Although historical explanations rarely point to single causes for complex events, many of the major migrations and regional abandonments documented prior to modern times seem to be strongly associated with major climatic events or trends.

The impacts of climate change on near and distant past societies are clear from the archaeological record, and archaeological communities are recognizing the significance of Indigenous sciences and traditional knowledge in this work. Differently perceived and articulated from Western scientific principles, yet equally as systematically structured, Indigenous and traditional perspectives are critical for the context of climate change impacts. Our collective understanding of these impacts is strengthened through collaboration with Indigenous peoples and traditional communities, whose knowledge and worldview includes long-term, evidence-based histories of the places where they live and practical engagements with what is happening in their surroundings. To further decolonize our approaches to the issue, democratize our proposals for the future, and develop a holistic perspective we shall work with indigenous groups and traditional societies as equal partners.

All of the subjects represented in the previous topics – social inequality, resource management, food security, mobility, conflict – have major consequences for human security. The seven dimensions of human securities defined by the United Nations—economic, food, health, environmental, personal, community, and political—are viewed as necessary conditions for peace. Archaeologists have demonstrated that the circumstances surrounding competition over resources – reduced mobility, living under siege conditions, malnutrition – contribute to social stress and increasing fragility of immune
systems. In turn, human societies become more vulnerable to both chronic diseases, acute epidemics, and social upheaval.

Furthermore, most of the prehistoric and historic studies conducted by archaeologists have shown that climate change, natural catastrophes, pandemics, etc. did not leave people helpless, but they actively and creatively tried to find solutions. Even when concerted efforts sometimes failed, gained trust in the capabilities of societies facing changes could be bolstered by archaeology.

Finally, archaeologists recognize that the accelerated loss of cultural heritage from the impacts of climate change removes the possibility of engaging with significant portions of human history. The well-being, resilience, and identity of communities who interact with these places is thus also threatened by resource loss.

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