Wet and Dry : Rivers, Floods, and Droughts in World History

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Sponsors: Rachel Carson Center for Environment and Society, LMU Munich; Center for Ecological History, Renmin University of China (RUC)

Conveners: Christof Mauch (Rachel Carson Center), Donald Worster(University of Kansas/RUC), Xia Mingfang (Center for Ecological History, RUC), Hou Shen (Center for Ecological History, RUC)

Participants: Andy Horowitz (Yale University); Andrea Janku (University of London), Bradley Skopyk (Universidad National Autónoma de México); Dale Stahl (Columbia University); Dorothy Zeisler-Vralsted (Eastern Washington University); Ellen Arnold (Ohio Wesleyan University); Emily O'Gorman (Macquarie University); Eric Strahorn (Florida Gulf Coast University); Hu Yingze (Shanxi University); Han Xiang (Renmin University of China); John Morgan (University of Warwick); Kathryn Edgerton-Tarpley (San Diego State); Kundai Manamere (University of Zimbabwe); Ma Junya (Nanjing University); Nicholas Breyfogle (Ohio State University); Peter Coates (University of Bristol, Unable to attend); Pan Wei (Shaanxi Normal University); Ruth Mostern (University of California, Merced); Ruth Morgan (Monash University); Seth Garfield (University of Texas at Austin); Severin Hohensinner (University of Natural Resources and Life Sciences, Vienna); Svetlana Kovalskaya (Eurasian National University); Steven Serels (Harvard University); Tim Soens (University of Antwerp); Wang Jiange (Fudan University); Zhang Jingping (Tsinghua University); Zhang Jiayan (Kennesaw State University); Zhang Ling (Boston College); Zhang Li (Shaanxi Normal University); Zhou Qing (Southern China University of Agriculture)

Water, the material basis for organic life, is one of the most important elements in the ecological environment. An overabundance or shortage of water can have a huge impact on human society, and at its most extreme, in the form of large-scale disaster, it can even leave long-term traces in history. Every culture and society has had to find ways to adapt to this dependence on water. Some of these adaptive measures have been very successful, while others have had severe consequences for the natural world. Between the success or failure of different strategies, we can see not only the diversity of ecological systems and cultural ties between water and human society, but also the historical roots of a range of social problems. This conference brought together our studies of ecological history and environmental history and put them in a global context, allowing us to explore the common features and differences between a wide range of societies and cultures, and reflect on the relationship human beings

and nature today. This conference was of both academic and practical significance.

DONALD WORSTER put great emphasis on the importance of global historical study on this topic in his keynote speech entitled "The Age of Vulnerability." He suggested that historians can be important in environmental research. We can provide a long-term perspective on how climates and societies have interacted over time, how people in the past have tried to prevent or adapt to floods and droughts, and what worked and what did not and for how long. We can tell intriguing stories about the struggle to satisfy human needs in changing environments. We can help explore human nature more profoundly and at the same time demonstrate that, though constant in their essentials, human needs have many different ways of being met, some of which people may have forgotten, or never implemented. Finally, we can show that, although humans have often created disasters by the pressure of their needs, they have also desired a more lasting harmony within the circle of nature.

The Yellow River is known as the mother river of China, who gave birth to the Chinese civilization. In the first session, "The Yellow River in History," four scholars introduced their newest research, looking at different historical periods and regions of the Yellow River, and the social problems caused by floods, sandification, and droughts. **ZHANG LING** discussed how the particular hydrological character of the Yellow River—its heavy silt load—defined not only the physical but also political and economic landscapes. She briefly surveyed millennia of soil erosion in the river's middle reach, and finally focused on Lankao. She pursued a localized perspective to unfold the interactions between sand and other members of this riverine society. **RUTH MOSTERN** reevaluated the existing Yellow River disaster data from a long-term perspective. In her draft database of the Yellow River, she found the often-repeated figure of 1500 flood disasters will need to be revised. "The location, nature, and frequency of Yellow River events were not constant. They changed dramatically during imperial history as populations rose, conflicts over the Ordos region increased, and the stability of the environmental system declined. **HU YINGZE** used historical materials of Qing dynasty and the Republic of China to discuss the interaction between flooding, watercourse shifts, and the technical strategies used by the farmers, with a focus on the Longmen-Tongguan section of the river. Over the course of many decades, riverside dwellers developed technological strategies for farming the sandy alluvial land system of the Yellow River and regulations for land ownership in an area of shifting boundaries. He argued that all these practices are environmentally friendly. **KATHRYN EDGERTON-TARPLEY** discussed the local effects of the Yellow River flood of 1938–1947. She examined four points: 1) key hallmarks of the flood; 2) the factors that made the flood a predominantly rural catastrophe; 3) how the rural people most directly affected by the flood experienced and responded to the disaster; 4) local perspectives on the efficacy of the relief projects organized by the nationalist state. She also discussed the often difficult choices that had to be made: top-level decisions to breach dikes as well as more personal choices, as when families had to decide whether they should flee, starve together, sell a daughter, or rely on begging or the uncertain mercies of state intervention.

The second session, "Droughts around the Globe," exhibited the causes and impact of

droughts in different countries. The speakers explored the popular understanding of droughts and social responses to them, as well as the evolution of the concept. **SETH GARFIELD** focused on the uneven impact of drought in northeastern Brazil in 1942–43. He argued that multiple human factors caused the drought. He also looked at how macroeconomic, geopolitical forces, microsocial histories, informal information networks, and local knowledge shaped popular understandings and responses to drought. His research revealed that the human factors caused the social vulnerability to the drought. **RUTH MORGAN** showed how the 1914 drought in Australia affected Australians' understanding of the continent's climate variability and their preparedness for periods of water scarcity. Rural Australians, her case study showed, lacked "hydro-resilience" in the process of expanding agricultural areas, and their farming methods were poorly suited to where the water supplies were inadequate. **KUNDAI MANAMERE** considered the periodic drought/flood problem in Zimbabwe's southeast Lowveld. She suggested that efforts have been made at local, governmental, and international levels to mitigate the drought effects. However, the involvement of the community and the adoption of local knowledge by NGOs may be the key making the Lowveld self-sustaining. She believed that solutions to the drought problem should accommodate local people's practices and beliefs. **ZHANG JINGPING** pointed out that during the modernization of irrigation in the west of Gansu corridor during the Qing dynasty, the local people considered agricultural drought to be a common phenomenon. At the beginning of the Republican era, the notion of "drought" as a disaster was created.

The topic of the third session was "Coping with Aridity." In this session, the interaction between different environmental, social, and political processes stood in the forefront. **ANDREA JANKU** pointed out that although the "Ding-wu drought disaster," which happened in late Qing dynasty, has attracted scholarly attention for many years, the drought still plays no role in mainstream accounts of China's nineteenth-century history. She explained that drought disasters were a common issue in the Henan province. It corresponds with the silence about the famine of contemporaries. She tried to break the silence, and wondered whether human actions created the conditions that turned a frequent life experience into deadly disasters? **BRADLEY SKOPYK** presented historical reconstructions of two watersheds in central Mexico: the Zahuapan River and the Teotihuacan River. He explored a transformation of central Mexican hydrology that began around the seventeenth century. He suggested that seventeenth-century socio-economic processes exacerbated flooding, while severe meteorological events provided critical sudden inertia. **HAN XIANG** pointed out the connection between natural factors and human activities which Chinese scholars cannot ignore. He demonstrated this interaction by analyzing the transformations of floods and droughts in the watershed of Hutuo River. Due to a combination of human activities and climate, Hutuo River finally deceased in an ecological sense in the 1980s.

The fourth session, "Dealing with Droughts and Floods," mainly discussed national and local prevention policies and social response systems, including coping strategies for drought and flood disasters. By quantitatively analyzing the changes of water volume during the rainy season from the Qing dynasty, **PAN WEI** argued that many large-scale flood peaks appeared before the mid-seventeenth century. But the river management during the Kangxi period was

not adjusted in time. The idea of quotas and "canals are the most important" policy of the Qing dynasty resulted in river systems not always being able to cope with a sudden increase in the amount of water, thus causing floods. **STEVEN SERELS** reconsidered the effects of the development of commercial agriculture as drought reserves in the northern and eastern Ethiopian foothills in the twentieth century from a regional perspective. The development of these drought reserves was a widely accepted famine-coping strategy. However, the complex contradictions and conflicts between administrators and pastoralists led to the different views of how development should progress. This process caused a series of famine prevention policies with negative consequences. By analyzing the manifestations of the exceptional natural phenomenon "zhyt" (in Russian "jute") in the Kazakh steppe, **SVETLANA KOVALSKAYA** examined this phenomenon (the massive loss of livestock from starvation) throughout history as well as its impact on the pastoral economy. She also discussed the life support system of Kazakh nomads and adaptability of the nomadic society to overcome the effects of *jute*. According to **ZHANG JIAYAN**, changes in dike management profoundly influenced water deity worship in the Jianghan plain of central China. From a long-term perspective, the shift in water deity worship could be marked off into three different periods: the late imperial, the Republican era, and the period after 1949.

The fifth session, "Flood Disasters-impacts and Legacies," focused on the transformation of water networks, cultural identity in relation to drought and flood disasters, ethnic conflict, and social divisions. **WANG JIANGE** argued that after the destruction of the ecological system of the middle and lower reaches of the Wu Song river system, the whole region became much more vulnerable to flood and drought disasters. When big Wei field was split into small Wei field during the Ming dynasty this also increased drought sensitivity. These man-made changes caused a dry land landscape to appear in the wet Jiangnan region. Rice-planting declined in these drought areas. Water conservation and tax collection became the local political issues. **PETER COATES**'s contribution to the workshop focused on the Italian Po's capacity to overflow its banks and explored how the people of the Po have responded to their river. The Po has a dual identity: It can be seen as a benevolent and malevolent force. Coates also considered the Po in relation to the development of Italian culture and explored the process of irrigating society. **DOROTHY ZEISLER-VRALSTED** used the great Mississippi River flood of 1927 to explore African Americans' living conditions since the1600s. The Mississippi River served as a refuge and offered sustenance for African Americans. Meanwhile the river carried the history of the development of the African-American community. The 1927 flood was a painful reminder of their marginalized existence in a racist society, as it exposed the fissures in a society divided by race, class and gender. **ANDY HOROWITZ** pointed out that the flood known as Hurricane Katrina was the consequence of a spatial economy of power, not a pure meteorology calamity. It was a confluence of human decisions, especially the government policies, that made Lower Ninth Ward in New Orleans, Louisiana, became the most prominent symbol of the Katrina disaster.

When confronted with disasters, human always use their wisdom and experiences to try to mitigate the effects. The focus of the sixth session, "Managing Rivers—Controlling Floods," was the success or failure of these efforts in world history. **DALE STAHL** examined the British

response to the flood seasons of the Tigris and Euphrates rivers in 1919, 1923, and 1926, which were during the British occupation. The water management policies made by the British government played a key role in the genesis of a new state in the Middle East. The water policies affected British politics and Iraq's future. According to **ERIC STRAHORN**, large water works have not successfully prevented or even controlled large floods in the Himalayas since the 1950s. But the policymakers have continued to advocate large waterworks as a way to prevent or manage floods. One explanation for that is there is little historical awareness among the engineers and policymakers, so that they hardly ever did any analysis of the track record of previous dams. The other factor is the poor dam design or mismanagement. **ZHANG LI** pointed out that sometimes the ecological factor was not the most important consideration when building a reservoir. The expansion of Dahaizi Reservoir in Xinjiang province was related to the issues such as the transformation of China's domestic situation and subtle changes in Sino-Soviet relations. **NICHOLAS BREYFOGLE** discussed the interactive relationships between the flooding of Angara River and Lake Baikal that began in the mid-1950s and dramatically transformed the water system and human ecologies. He mainly considered three questions: 1) the geological and biological processes of the river and lake; 2) the social and cultural systems of the humans in the region; 3) the technological structures and schemes of Soviet engineers and urban planners combined to produce a variety of dramatic, contested results in the damming and flooding process.

In the seventh session, "Risks and Floods since Medieval Times," particular attention was paid to long-ago disasters. **ELLEN ARNOLD** focused on riverine risk in early medieval (300–900) Europe. She explored how the historical material helped us understand both the experience of floods and the ways that flood events were understood by medieval individuals and communities. She pointed out that small-scale disasters also leave imprints on culture and historical memory. Secondly, she suggested that nature events that we define as "disaster" today may not have had the same interpretation in the medieval world. **TIM SOENS** argued that the transition from medieval peasant society to agrarian capitalism had a major impact on the flood history of the North Sea River estuaries during the period 1300 to 1800 CE. The capitalists had their own flood experience to cope with the disasters. **SEVERIN HOHENSINNER** considered the use of dikes in Vienna to control the Danube and protect themselves from floods. However, he argued, as more and more dikes were built, the frequency and intensity of floods increased after 1768. As a result, every new dike reduced the flood retention area and heightened the flood stage. **ZHOU QING** discussed the relationship between the hydrological environment changes of the Pearl River and its agricultural development under the increasing floods in the middle and late Qing dynasty. In order to fight against flood disasters and complete agricultural production, the different agricultural models and different local knowledge system adopted for the different areas in the delta appeared.

The topic of the final session was "Too Much or Too Little—Environmental Challenges and Crises Around the Globe." This session inspire the participants rethink floods and droughts and the ways in which nature and human have coexisted with and re-made each other. **EMILY O'GORMAN** discussed how people lived with and understood floods in the Murray-Darling Basin, Australia, from the 1850s to the early 2000s. These rivers and floods have been central

to Aboriginals, settlers, and migrants. Due to different kinds of understandings of floods, areas of tension and agreement between custodians appeared. By examining the Huai River management beginning from the middle Ming dynasty, **MA JUNYA** pointed out that the flood disaster problems shifted from the middle and lower reaches of the Yellow River to the Huaibei region. As a result of engineering and political decisions the whole area was sacrificed. The ecological and social impact was enormous. By analyzing the Severn River flood of 1607, **JOHN MORGAN** argued that the worst flood disaster in mainland British history had a series of political consequences, such as the emergence of a national framework for flood defense and changes in communal coping strategies. Finally, the disastrous events also affected the contemporary political narratives and the formation of early modern state.

Unlike other academic conferences, our workshop did not set a paper-reading time, and directly entered into the stage of paper comments. During the conference, the participants had a lot of free discussions. The questions discussed mainly were: the definition of disaster, man-made disaster, and nature disaster, how to judge the disaster—bad? good? Religion, technology, population, race, gender, and how these factors interacted with the disaster, local experiences, cultural change, the relationship between environment and development of capitalism, etc.

CHRISTOF MAUCH and **XIA MINGFANG** provided a concluding address for our conference. Mauch pointed out two elements of special significance: Firstly, the comparison between "drought" and "flood" has been eye-opening in several respects: particularly because the former is a slow and gradual process, andthe latter a sudden event. He emphasized that the conference helped us to discuss events vs. processes in a systematic way. Secondly, our conference was a truly international conference that offered opportunities for regional and national comparisons. ,Above and beyond that,he explained what he called the "Galloping Gertie" effect: many of the measures that were taken to stabilize a situation (i.e. to cope with disasters) had a destabilizing effect in the long run. Christof Mauch praised highly the conference preparations made by Center for Ecological History at RUC. Xia Mingfang concluded that this conference was a successful high-level international academic event. That scholars from so many countries were able to come together and discuss topics of common interest, linked us as a whole ecosystem. Our academic conversations and friendship reached the status of "you have me, and I in you:" this kind of communication is certain to encourage the development of ecological and environmental history in the world.

-----Wang Zanwei (Renmin University of China)