

Table S1: Summary of the Reviewed Papers

Climatic stress	Location	Theme	Underlying condition	Impact (security and conflict)	Adaptation measures	Reference
Climate Change	Global (review)	Theorising conflict-sensitive adaptation	A maladaptation could produce human insecurity. For example, geo-engineering, cross-border water sharing, REDD+, migration, etc.	They directly cause human threat and could potentially turn to violent conflict	Coordination, networking and cooperation and use “do no harm” principle in action	[11, 20, 42]
Extreme heat and dry	Chad, Africa	Resource distribution in an existing conflicting area	Prevail conflict over limited resources, marginalisation, poor human capital, over-exploitation	shortened rainfall intensified aggression and conflict	Livelihood diversification, reducing dependence on natural resources	[12]
Extreme heat and dry	Botswana, Africa	Herding	Extreme marginality in pastoral society	Fly epidemic, livestock diseases, people–wildlife conflict	Government revises land use policy which restricts pastorals from herding	[16]
Reduction of Rainfall	Mali, Africa	Livelihood vulnerabilities	Poverty and higher dependence on natural resources	Struggle over limited resources, unemployment, migration	Lack of coordination and information flow across different levels. Local participation and consideration of local specificities are grossly missing	[17]
Extreme Heat and Dry	Sudan, Africa	Agriculture	Unfertile soil, lack of finance and machinery, shortage of labour, inefficient policy support	Crop loss, migration, unemployment	Early planting, frequent weeding, diversification of crops, cultivation of early maturing varieties and soil conservation	[18]
Climate change	Global (South)	Global distribution of responsibility to Climate Change	Social cost, population growth, rapid urbanisation, ethno-political exclusion, poor national economies	Inequity in vulnerability and responsibility constrains many countries’ adaptation initiatives	The allocation of international adaptation fund to the global south should be approved on a sectoral basis	[19]

Extreme heat and dry	Pakistan, Asia	Agriculture	High levels of poverty, poor infrastructure, and weak local government	Crop loss, death of livestock, water scarcity	Crop diversification, adjustment of cropping season	[23]
Rainfall variability	Sri Lanka	Farmer-wildlife conflict	Farmer–elephant conflict was pre-existing. However, the frequency has increased in recent years.	Increased elephant farmer encounters during droughts	Farmers have adjusted their crop cycle with rainfall. Farmers have awareness on climate change, but do not receive any state level support on agricultural adaptation measures	[24]
Increasing temperature, low rainfall	Zimbabwe, Africa	Local fisher	High unemployment, poverty, structured inequality, low human capital	Constrained livelihoods, sharing in limited resource, gender inequality, declining fishing resources, over-exploitation of resources	Livelihoods diversification, facilitation of access to fishing permits and other fishing-related assets	[25]
Global Warming	South China Sea	Marine resources distribution	Lack of transboundary collaboration and legal framework	Coastal inhabitants, ecosystem and economy will be impacted	Development of transboundary network of marine protection area, institutional and legal reform	[26]
Warmer sea water	North America	Marine fisheries distribution	High human and social capital among the fisheries	Changing pattern of fisheries' resources, infrastructure (because of warmer climate) and their distribution	Cooperative management across political boundaries for species likely to cross boundaries. Tradable permit/quota or dynamic allocation systems can make the allocation system more adaptable. Communities may pursue novel collective adaptation strategies	[27]
Extreme heat and dry	Sudan, Africa	Adaptation in a pre-existing violent condition	Prevailing violent conflict, inadequate resource, low human capital, poverty	Drought affected vegetation, low crop productivity (partly due to war)	Crop diversification, adjustment of cropping season	[28]

Reduced snow melting	European Alps	Cross-border water sharing	Willingness for cross-country collaboration	Reduced water in different distributaries in the basin	A group of scientists from all participating countries co-producing future adaptation plan	[29]
Global Warming	European Alps	Sustainable Tourism	Local economy is heavily dependent of winter tourism	Snow melting would reduce income	Measuring future economic impact and have support service in place, diversifying economy	[30]
Storm	Denmark, Europe	Storm water Management	Diversity in politics, knowledge, ideology, and cognition	Diversity constrains collaboration, though facilitates innovation and adaptation	Bridging conflicting logics without constraining diversity could help achieve adaptation	[31]
Storm Water Surge	Europe, Australia	Cities (Urban Flood)	Conflict over argument on economic efficiency and economic inefficiency	Urban flood, economic loss	Integrated approach to water management linking local use of rainwater (LAR) and climate adaptation, institutional coordination	[32]
Urban Flooding	Kolkata and Mumbai, India	Climate Resilient Cities	Over extraction of ground water, rapid urbanisation in flood prone areas, illegal growth in environmentally sensitive areas.	Cities are facing more and more flood in recent years which is impacting poor urban neighbourhood. All climatic models suggest that impacts would be much higher in future	Climate action plan appear as cynical exercise, producing fantasy plans that may have minimal impact on development practices. Climate resilience appear to become a political opportunity	[33]
Sea level rise, precipitation change	Europe	Cities	Cross-sectional variables	The study offers a better understanding of complex interfaces	Cross-sectional model of six cities incorporate agriculture, biodiversity, flood, forest, urban and water	[34]
Climate change	Netherlands, Europe	Conflict-sensitive adaptation	Strong conflict between priority and feasibility criteria in this indicator-based ranking of adaptation policy	Changes in availability of water soil, and/or biodiversity, drought, erosion	More research needed on indirect land use and conflict implications of climate mitigation and adaptation measures	[35]

Climate change	Germany, Europe	Land use—Modelling	Open to cooperation and dynamic modelling	Scarcity of land, water quality, biodiversity, landscape fragmentation	The model is flexible to different setting and adjustments and involve regional actors for their opinions	[36]
Water Scarcity	North America	Cities	Behavioural and cultural dimensions of people	Complex and dynamic urban resources conflict	Reducing outdoor water use require public education, and participation, consultation, conflict resolution, partnership, and citizen authority. Improving cross-sector coordination	[37]
Climate change	Global (South)	Climate finance for developing countries	Over-dependence on natural resources	Crop loss, new diseases, displacement, loss of livelihoods, food insecurity	Accessing adaptation finance	[43]
Climate change	Global	Cross border water sharing	Different institutions and settings of a common river across border	Territorial division of authority creates incentives for local innovation, learning and adaptation	Context sensitive flexible approaches to accommodate territorial design variables	[44]
Climate change	Brazil	Contested Knowledge	Diverse knowledge, research, planning, perception	Agricultural Loss	Water managers need to have a thorough understanding of evapotranspiration process including knowledge on spatio-temporal rates.	[45]
Climate change	Africa	Gender	Gender role in society, poverty, poor institution, and social services	For having over dependence on nature, which are the hardest hit of climate change in Africa.	Conflict resolution approaches and climate adaptation strategies need to be gender-sensitive	[48]
Climate change	India	Gendered agrobiodiversity	Marginality and structural inequality in the social system	Asymmetrical power relations within households, communities and structural inequalities make women more vulnerable	Gender sensitive adaptation policy development needs much clarity on cultural and socio-economic status quo of women and its links to crops, tasks and role of women.	[49]

Extreme heat and dry	Kenya, Africa	Conflict over Natural resource	Unemployment, prevailing conflict over access to natural resources, scarcity of resources, absence of planning	Water scarcity, human wildlife conflict, farmer pastoral conflict	Sensitivity assessment can help identify effective adaptive measures	[57]
Decreasing rainfall	China	Environmental conservation	Pollution from the coal chemical industry	Environmental pollutant damage, changes in rainfall in rainfall affect both the quality and quantity of water.	Economic efficiency performance and environmental pollutant damage can be balanced by equilibrium water resource and waste load allocation strategy.	[58]
Climate change	Tanzania	Community based Adaptation	Deforestation, overexploitation of ground water, destruction of water catchment areas, overfishing, uncoordinated construction of seawall	Nature-dependent livelihood income shrank, river channels dried up, soil fertility has reduced, livestock is hugely impacted, tourism is challenged for beach erosion	An integrated approach to adaptation can help communities retain flexibility by avoiding maladaptation	[59]
Typhoon and Earthquake	Taiwan, Asia	Ecological footprint	Rapid economic growth has increased pressure on land development	The race in economic growth will increase the ecological cost	Adaptation needs to have a balance with ecological footprint and economic growth	[60]
Climate change	Global (coffee production)	Shifting land use (coffee vs. forest)	Constraints of land resources, potential forest loss, increased emission	Climate change will have disparate effects for two species of coffees considered. Brazil might lose up to 84% of cultivation area.	Expansion of coffee plantation in newer areas would have potential conflict with other land use, biodiversity loss and compromised ecosystem services	[61]
Climate change	Germany	Institutional Adaptation to climate change	Rigidity of bureaucratic public offices in cities	Integrative institutions constitute a sufficient but not necessary condition for "integrative adaptation"	State administrations may thus avoid additional climate-related burdens for citizens and conflicts among resource users by providing local administrations with means for additional coordination	[62]

Climate change	Sub-Saharan Africa	Nutrition Security	poor access to health services, poor household, undernutrition	Negative trend in environmental and natural resources. Calories availability in 2050 is likely to decline resulting in an additional 23 million undernourished children. Climate change related hunger, combined impact of decrease in agricultural production, flood, droughts, poor water infrastructure increase food prices, decrease livelihood sensitive to climate-related shocks.	Food security and nutrition needs to be prioritized in climate change interventions in Africa. Nutrition-focused adaptation and mitigation strategies are essential	[63]
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