Supplementary data

Table S1. Overview of the systematic review studies

	Reference	Aim/Purpose	Theoretical approach	Data source	Type of analysis	Population/ Sample	Funding source	Outcome
1	Akhter, S., Raihan, F., Sohel, M. S. I., Syed, M. A., Das, S. K., & Alamgir, M. (2013). Coping with climate change by using indigenous knowledge of ethnic communities from in and around Lawachara National Park of Bangladesh. *J. For. Sci*, *29*(3), 181-193.	To analyse the indigenous knowledge of selected communities in Bangladesh and to explore the climate change scenario, impact on ethnic communities and their coping strategies.	None specified	Face-to-face interview: 4 participants focus group discussions: 6 people each in 4 groups Survey: 59 households	Mixed: Case study Factor analysis	Residents of four communities around fragile ecosystem of Lawachara national park of Bangladesh	None indicated	The 4 communities studied have traditionally developed climate resilience systems like developing safety measures and finding alternatives. The strategies they employ improve farm yields and provides diversified livelihood options.
2	Balehegn, M., Balehey, S., Fu, C., & Liang, W. (2019). Indigenous weather and climate forecasting knowledge among Afar pastoralists of north eastern Ethiopia: Role in adaptation to weather and climate variability. *Pastoralism*, *9* (1), 1-14.	To systematically document indigenous weather and climate forecasting knowledge among Afar pastoralists, with the aim of making such information available, and enhance use of this knowledge in climate change adaptation and explore synergies with modern	Understanding the production, accumulation and transmission of indigenous weather forecasting knowledge as a dynamic process where Afar pastoralists not only record observable changes and try to associate with the results or happenings but also get feedback from a continuously changing relationship between observable bio-physical variables	Focus group discussions, individual interviews, a feedback workshop and a review of relevant information	Qualitative	Afar pastoralists of Ethiopia	Local and Indigenous Knowledge Systems (LInKS) project at the Climate Frontlines Program of UNESCO (Contract No. 4500340760-A1). Dr. Mulubrhan Balehegn was supported by the Chinese Academy of Sciences President's International Fellowship Initiative (PIFI), and Dr. Wu Liang was supported by the Natural Science Foundation of China (NSFC) (Grant No. 41401068 and 41661144022).	Demonstrated the dynamic process of indigenous weather and climate knowledge production, analysis and communication. This shows the value of indigenous knowledge in contemporary pastoral communities, while highlighting synergies with the modern weather and climate knowledge system for co-production of knowledge that serves the objectives of local people. They recognize the potentials and limitations

		weather forecasting system.	and un-observable changes in weather					of their traditional weather forecasting techniques. Therefore, no prediction information is taken at face value.
3	Boillat, S., & Berkes, F. (2013). Perception and interpretation of climate change among Quechua farmers of Bolivia: indigenous knowledge as a resource for adaptive capacity. *Ecology and society*, *18*(4).	To examine how farmers make observations of climate change, to explore how they ascribe meaning to it, and to investigate strategies that they propose to adapt to climate change	None specified	Interview	Qualitative	Quechua farmers of Bolivia	Swiss National Centre of Competence in Research North-South and the University of Manitoba.	Adaptations hinge upon indigenous ways of interpreting change: holding knowledge based on personal experience and practice, focusing on associations between phenomena, making analogies between natural phenomena and living beings, interpreting phenomena as parts of natural cycles, and drawing from past experiences.
4	Córdoba Vargas, C. A., Hortúa Romero, S., & León-Sicard, T. (2020). Resilience to climate variability: the role of perceptions and traditional knowledge in the Colombian Andes. *Agroecology and Sustainable Food Systems*, *44*(4), 419-445.	To present adaptation strategies that are being implemented by farmers, to analyse their perceptions of the causes and impact of climate variability, and to discuss the role of transformation for building resilience.	Socio-ecological systems resilience framework	Interview, survey, focus group discussion, observation	Mixed	Survey of 266 community residents, 35 residents involved in focus group discussions and 96 residents interviewed	Jesus Antonio Bejarano grant (Faculty of Economics, Universidad Nacional de Colombia)	Some participants believe there is a divine plan behind climate events, and this is linked to a low resilience path since this mindset can lead to a passive stance on climate change responses. The majority of adaptation strategies consist of short-term, farm-scale agricultural practices, thus, the impact in terms of livelihoods improvement is very limited.
5	David, W., & Ploeger, A. (2014). Indigenous Knowledge (IK) of water resources management in West	To describe the indigenous knowledge of farmers at Nagari Padang laweh	Concept of water demand management	The combination of in-depth interview,	Qual: Participatory Rural Appraisal (PRA) such as	farmers at Nagari Padang laweh	None indicated	The result shows that the awareness of the people and scarcity of water conditions has allowed the people of NPLM to face

	Sumatra, Indonesia. *Future of Food: Journal on Food, Agriculture and Society*, *2*(1), 40-44.	Malalo (NPLM) and their adaptability to climate change.		life history, semi structure questionnaire, pictures, mapping and expert interviews was implemented.	observation and discussion. 53 farmers interviewed	Malalo (NPLM) West Sumatra, Indonesia		this challenge with wisdom. Aia adat (water resources controlled and regulate by custom) is one of their strategies to distribute the water. The general rule is that irrigation will flow from 6 pm -6 am regularly to all farm land under supervision of kapalo banda. When rains occur, water resources can be used during the day without special supervision.
6	de la Riva, M. V., Lindner, A., & Pretzsch, J. (2013). Assessing adaptation–Climate change and indigenous livelihood in the Andes of Bolivia. *Journal of Agriculture and Rural Development in the Tropics and Subtropics (JARTS)*, *114*(2), 109-122.	To provide information regarding the climate variability and the adaptive measures based on traditional knowledge and new technologies that communities are using to cope with climate change.	Theory of the co-evolution of ecological and social systems	Interview, observation, secondary data	Case study	30 Chazarani community residents	Alexander von Humboldt Foundation	Most of the adaptation measures have their roots in traditional ecological knowledge and have been used to survive over long periods of time. They are resilient to a variety of environmental and social changes.
7	Derbile, E. K. (2013). Reducing vulnerability of rain-fed agriculture to drought through indigenous knowledge systems in north-eastern Ghana. *International Journal of Climate Change Strategies and Management*, 5(1), 71-94	To analyze how farmers are reducing vulnerability of rain-fed agriculture to drought through indigenous knowledge systems (IKS) in the Atankwidi basin, north-eastern Ghana.	Theory of vulnerability (with the human factor as a focal point)	in-depth interviews, focus group discussion, survey conducted on 131 systematically and randomly sampled household	combined qualitative and quantitative research methods and data.	the Atankwidi basin, north-eastern Ghana.	None indicated	The results show that farmers are planting multiple indigenous drought resilient crop varieties and employing different rounds of seeding and or staggering planting between multiple farms. They are also applying indigenous forms of organic manure, checking soil erosion through grass strips and

				s in three communities of the basin, namely Yua, Pungu and Mirigu.				stone terracing and adopting paddy farming for improving soil and water conservation towards enhancing plant adaptation to drought. The paper asserts that through conscientious effort, farmers are reducing vulnerability of rain-fed agriculture to drought through indigenous knowledge systems of drought risk management
8	Dimelu, M. U., & Nwuba, L. E. (2018). Indigenous Climate Change Adaptation Strategies used by Honey Producers in Rural Communities of Enugu State. *Journal of Agricultural Extension*, *22*(2), 180-192.	The study examined the effectiveness and challenges in the use of indigenous climate change adaptation measures	None specified	Structured interview schedule, focus group discussion and observation	Mixed analysis was carried out using descriptive statistics.	bee farmers in Enugu State, Nigeria	None indicated	The respondents effectively adapted to climate change through change of sites of hives, tree planting, amendment of the periods of beekeeping operations, among others. However, they experienced challenges caused by indiscriminate cutting of trees, inadequate information on adaptation measures, & pesticide threat.
9	Ebhuoma, E., & Simatele, D. (2017). Defying the odds: Climate variability, asset adaptation and food security nexus in the Delta State of Nigeria. *International Journal of Disaster Risk Reduction*, *21*, 231-242.	To demonstrate how the rural people who produce most of the staples consumed in the country utilise their asset portfolios in adapting to climate variability and change.	Asset-based adaptation framework	Interview, focus group discussion	Qualitative	Two communities in Isoko, Delta state	National Institute for the Humanities and Social Sciences – Council for the Development of Social Science Research in Africa (NIHSS-CODESRIA)	In responding to climate change threats, farmers re tirelessly and consistently employing their bundle of assets to continue food production. Human and social capitals play prominent roles in facilitating the accruement of other assets thereby ensuring food security.

								Nigeria is anticipated to be a hotspot for future extreme weather conditions, thus, the tendency that the current adaptive strategies will be compromised is very high.
10	Egeru, A. (2012). Role of Indigenous Knowledge in Climate Change Adaptation: A case study of the Teso Sub-Region, Eastern Uganda. *Indian Journal of Traditional Knowledge*, 11(2), 217-224	The study identified indigenous knowledge practices used in climate change adaptation, documented indigenous knowledge in climate observation, and identified constraints to indigenous knowledge use for climate change adaptation.	None specified	Focus group discussion, semi-structured interview, informal observation 52 households	case study	Farmers of the Teso Sub-Region, Eastern Uganda	None indicated	Low mastery of indigenous knowledge practices by younger community members and persistently changing weather patterns have challenged community reliance on indigenous knowledge for climate change adaptation. There is need to strengthen dissemination of indigenous knowledge and to integrate modern approaches that strengthen indigenous knowledge in climate change adaptation and resilience.
11	Elia, E. F., Mutula, S., Stilwell, C. (2014). Indigenous Knowledge use in seasonal weather forecasting in Tanzania: the case of semi-arid central Tanzania. *South African Journal of Libraries and Information Science*, 80(1), 18-	To determine how farmers have used indigenous knowledge (IK) to adapt to climate change and variability in the semiarid region of central Tanzania.	Rogers' (2003) Diffusion of Innovations theory and model	interviews and focus group discussions	predominantly qualitative approach (case study) and a post-positivist paradigm content analysis for qualitative data and SPSS to generate descriptive statistics.	farmers, agricultural extension officers (in two villages, Maluga and Chibelela) and the Climate Change Adaptation in Africa	None indicated	It was established that uncertainty about seasonal weather forecasts is one of the most critical factors which forces farmers to continue using IK. Farmers' knowledge of birds, insects, plants, animals, wind direction and astronomical indicators is used to predict weather patterns

						project manager		and make the necessary farming adjustments.
12	Hooli, L. J. (2016). Resilience of the poorest: coping strategies and indigenous knowledge of living with the floods in Northern Namibia. *Regional Environmental Change*, 16(3), 695-707	This research studies local residents' coping strategies to endure the irregular flood events. Particular interest is placed on the learning processes that enhance the residents' capability to cope and the role of indigenous knowledge.	Social theory of resilience (socio-ecological resilience)	various qualitative and quantitative data sources, and comparative analyses between the flood dynamics in urban and rural environments	mixed	Residents in Northern Namibia	"Partly funded by the Academy of Finland's Knowledge Creation Processes project. The funding source was not involved in the study design, the collection, analysis or interpretation of the data, the writing of the report, or the decision of submitting the article for publication."	The abrupt socio-ecological changes, together with the multiple stressors related to poverty, have made residents more vulnerable to the flood events and attenuated the communities' coping strategies based on IK. Instead of focusing on the communities' capacity to self-organise, the focus of resilience building needs to be directed to emphasising the broader socio-political processes, which are making the communities vulnerable in the first place.
13	Hosen, N., Nakamura, H., & Hamzah, A. (2019). Using Traditional Ecological Knowledge to Adapt to Climate Change in Interior Sarawak. *Environment-Behaviour Proceedings Journal*, *4*(11), 185-191.	Explored observations of local climate change, climate change impacts and tribal adaptation strategies.	A TEK typology	Field observations and interviews	Qualitative approach	the Sa'ban tribe of Long Banga in interior Sarawak, Malaysia	None indicated	drought, wildfires and uncertain weather conditions are the Sa'ban's primary concerns. However, the tribe have demonstrated their adaptation strategies through the use of traditional ecological knowledge (TEK).
14	Hosen, N., Nakamura, H., & Hamzah, A. (2020). Adaptation to climate change: Does traditional ecological knowledge hold the	Uncovers the potential of traditional ecological knowledge (TEK) from the perspective	The TEK framework	Data were collected through interviews and field work	Qual.	3 indigenous communities in Sarawak, Malaysian Borneo: Lun	No external funding	these communities have observed a significant increase in temperature, with uncertain weather and seasons. Consequently, drought

	key? *Sustainability*, *12*(2), 676.	of indigenous communities in Sarawak, Malaysian Borneo, and explores how TEK helps them to observe and respond to local climate change.		observations and analysed using thematic analysis based on the TEK framework		Bawang, Sa'ban and Penan		and wildfires have had a substantial impact on their livelihoods. the communities maintain their TEK through cultural festivals and oral traditions passed from one generation to another.
15	Iticha, B., & Husen, A. (2019). Adaptation to climate change using indigenous weather forecasting systems in Borana pastoralists of southern Ethiopia. *Climate and Development*, 11(7), 564-573	To investigate the types of indigenous weather forecasting systems, mechanisms of climate information exchange, and how traditional forecasts have been integrated with contemporary forecasts to strengthen adaptation to climatic hazards	None specified	Conventional survey methods including participatory rural appraisal tools and factorial scoring technique	Mixed	Borana pastoralists of southern Ethiopia	None indicated	Forecasting was mainly based on observation and unique analysis of celestial bodies, atmospheric variables, and biological features. Respondents indicated that Uchu and Ayantu systems were the most trusted and reliable sources of local climate information. Borana pastoralists had established coping mechanisms that were performed in three phases: pre, during and post occurrence of predicted weather events; mainly aimed at improving their resilience to climatic shocks
16	Janif, S. Z., Nunn, P. D., Geraghty, P., Aalbersberg, W., Thomas, F. R., & Camailakeba, M. (2016). Value of traditional oral narratives in building climate-change resilience: insights from	To look at how traditional oral narratives in Fiji communities might be used to inform the development of effective and sustainable	None specified	Interview, observation	Qualitative	27 villages in 10 Fiji Islands	University of the South Pacific	The knowledge gulfs that exist in modern Fiji villages between both older and younger residents and between core and peripheral locations are well illustrated in this study. This does not render

	rural communities in Fiji. *Ecology and Society*, *21*(2).	adaptation strategies.						irrelevant the use of traditional environmental knowledge for developing future climate change strategies.
17	Jiri, O., Mafongoya, P. L., Chivenge, P. (2015). Indigenous knowledge systems, seasonal 'quality' and climate change adaptation in Zimbabwe. *Climate Research*, 66(2), 103-111	To identify IKS used by Zimbabwean farmers to predict seasonal weather patterns, and their adaptation strategies in response to these predictions.	None specified	focus group discussions, household surveys, and ethnographic interviews 100 respondents	mixed	Zimbabwean farmers	Acknowledged financial support from the National Research Foundation (NRF), South Africa	Results show that the use of IKS in local farming communities is an effective way of building coping and adaptation strategies. The results also revealed that indigenous knowledge is being eroded and is becoming less accurate in seasonal weather prediction.
18	Kpadonou, R. A., Adegbola, P. Y., & Tovignan, S. D. (2012). Local knowledge and adaptation to climate change in Ouémé Valley, Benin. *African Crop Science Journal*, *20*, 181-192.	Aims at demonstrating the local dimension of adaptation to climate change and the importance of local knowledge in adaptation planning.	Concept of climate vulnerability	-	Case study	Farmers in Oueme valley, Benin	None indicated	Community-based knowledge systems have been marginalised by dominant western knowledge systems in the search for sustainable solutions to climate change adaptation and mititgation. Scientific solutions carried out through top-down approach are not well adapted to the socioeconomic realities of local people in many cases. Therefore, a synergy between scientific and local knowledge is necessary.
19	Kupika, O. L., Gandiwa, E., Nhamo, G., & Kativu, S. (2019). Local	To investigate local community perceptions on	None specified	Interview, survey, focus	Mixed	Households in the Middle	Department for International Development (DfID) and	Local ecological knowledge can provide information on the

	ecological knowledge on climate change and ecosystem-based adaptation strategies promote resilience in the Middle Zambezi Biosphere Reserve, Zimbabwe. *Scientifica, 2 019*.	trends and causes of climate change, identify biophysical impacts of climate change at the local level and explore the ecosystem-based adaptation strategies towards climate change.		group discussion		Zambezi Biosphere Reserve	Chinhoyi University of Technology.	changing climate especially in under-researched areas. Such information can complement scientific data to inform policy on best practices to build adaptive capacity of rural communities in semiarid tropical savanna. Integrating local knowledge into climate change adaptation is possible if the knowledge holders are directly engaged as active participants in these efforts.
20	Mapfumo, P., Mtambanengwe, F., & Chikowo, R. (2016). Building on indigenous knowledge to strengthen the capacity of smallholder farming communities to adapt to climate change and variability in southern Africa. *Climate and Development*, 8(1), 72-82	To investigate local perceptions of the impacts of climate change and variability, and how indigenous knowledge may enable farmers to construct appropriate responses to these impacts and make key agricultural decisions.	None specified	Questionn aire surveys, key informant interviews , and participato ry action research approache s 200 household s	mixed	Makoni and Hwedza smallholder farming areas in eastern Zimbabwe	None indicated	Communities depended primarily on indigenous knowledge and local biological and geographical indicators of seasonal forecasts in making major strategic, tactical and operational decisions on crop production, including management of food stocks and social safety nets.
21	Mugambiwa, S. S. (2018). Adaptation measures to sustain indigenous practices and the use of indigenous knowledge systems to adapt to	Examines adaptation measures used to sustain indigenous practices and the use of indigenous knowledge systems	Marxist theory, capitalism and climate change; Afrocentricity, and the 'risky society' thesis.	results are derived from 30 purposivel y selected in-depth interviews	qualitative method and an exploratory design	Mutoko rural district of Zimbabwe	None indicated	This study concludes that climate change adaptation measures employed by the community have significantly helped them to sustain their indigenous practices in many ways.

	climate change in Mutoko rural district of Zimbabwe. *Jàmbá: Journal of Disaster Risk Studies*, *10*(1), 1-9.	(IKS) to adapt to climate change.						Also, the use of IKS, through activities such as crop type change from maize to traditional millet and sorghum (which facilitates traditional lifestyle and activities), re-establishes the community's indigenous practices since they are made to observe the practices of yesteryear.
22	Napogbong, L. A., Ahmed, A., & Derbile, E. K. (2020). Fulani herders and indigenous strategies of climate change adaptation in Kpongu community, North-Western Ghana: implications for adaptation planning. *Climate and Development*, 1-14.	To identify and categorize the various indigenous adaptation strategies of herdsmen in cattle production, towards understanding how IK can offer new perspectives for social engineering and innovation in livestock management.	Action theory of adaptation (Eisenack & Stecker, 2010)	2 Interviews, 4 focus group discussion, direct observations through photograph, seasonal calendar	Qualitative Analysed through coding and grouping adaptation strategies into themes.	Kpongu community, North-Western Ghana	None indicated	The results reveal multiple indigenous strategies of climate change adaptation in cattle herding among the Fulani. These include mobility-based strategies, diversification of sources of feed, labour division for meeting differentiated needs of cattle, and stress management in cattle.
23	Nelson, G. L., Zamora, O., de Guzman, L. E., Tatlonghari, R., Espaldon, M. V., & Brillon, J. (2019). The indigenous practices and climate change responses of ati and suludnon farmers in iloilo, philippines. *Journal of Environmental Science*	This study documented the indigenous knowledge for climate change adaptation of the Suludnons and Ati in Iloilo.	None specified	key informant interviews, focus group discussions and observations of farming activities and	Qualitative Secondary data were gathered to substantiate the findings from primary data	the Suludnons and Ati farmers in Iloilo, Philippines	Department of Agriculture-Bureau of Agricultural Research (DA-BAR) (an agency of the Philippine government)	Their responses to climate change include biodiversity-based cropping systems, changes in cropping calendar, use of indigenous varieties, consumption of non-traditional/wild foods, indigenous warning systems and diversified income sources

	and Management, 22(1):87-98			community life.				
24	Nkomwa, E. C., Joshua, M. K., Ngongondo, C., Monjerezi, M., & Chipungu, F. (2014). Assessing indigenous knowledge systems and climate change adaptation strategies in agriculture: A case study of Chagaka Village, Chikhwawa, Southern Malawi. *Physics and Chemistry of the Earth, Parts A/B/C*, *67*, 164-172.	Aimed at assessing the role of IKS in adaptation to climate change and variability in the agricultural sector in a rural district of Chikhwawa, southern Malawi.	None specified	qualitative data from focus group and key informant interviews and quantitative data from household interviews and secondary data	mixed	a rural district of Chikhwawa, southern Malawi	University of Malawi in collaboration with University of Dar es Salaam, funded by the Rockefeller Foundation	the community is able to use their IKS to adapt their agricultural systems to partially offset the effects of climate change. Like vulnerability to climate change, IKS varies over a short spatial scale, providing locally relevant adaptation to impacts of climate change.
25	Nzeadibe, T. C., Egbule, C. L., Chukwuone, N. A., Agwu, A. E., & Agu, V. C. (2012). Indigenous innovations for climate change adaptation in the Niger Delta region of Nigeria. *Environment Development and Sustainability*, 14(6), 901-914	To examine the level of awareness of Niger Delta communities about impacts of climate change and to identify and document indigenous innovations and adaptation practices by farmers in the region	None specified	Interview, focus group discussion 400 heads of farming households	Mixed: interviews, surveys and focus groups	Niger Delta communities	African Technology Policy Studies Network (ATPS) donors, including the Ministerie van Buitenlandse Zaken (DGIS) the Netherlands, Rockefeller Foundation, among others.	Findings of this study showed that about 90 % of respondents were aware of climate change and its impacts. The results further indicate that the farmers have practiced some innovative indigenous measures for climate change adaptation for many years.
26	Opare, S. (2018). Adaptation to climate change impacts: coping strategies of an indigenous community	This study unearthed coping strategies adopted by Dupong, an indigenous community in	None specified	Interviews (structured and semi-structured),	Mixed: Quantitative and qualitative methods	Dupong, Ghana	International Development Research Centre	Community members adopted key strategies such as rainwater harvesting, reliance on alternative sources of water and increased roles

	in Ghana to declining water supply *Climate and Development*, 10(1), 73-83	Ghana to limit adverse impacts of climate change-induced water shortages.		observations during guided walks, 4 focus group discussions				of males in household water collection that enabled them to minimize the adverse impacts of climate change on their water supply situation
27	Oviedo, A. F., Mitraud, S., McGrath, D. G., & Bursztyn, M. (2016). Implementing climate variability adaptation at the community level in the Amazon floodplain. *Environmental Science & Policy*, *63*, 151-160.	To examine how small-scale fisher-farmers make observations of natural resources and climate variability, explore how they interpret climate variability, and investigare actions that they propose for adapting to climate conditions.	None specified	Interview, focus group discussion	Qualitative	Fisher-farmers in the Amazon floodplain	WWF-UK and NOKIA	Adaptation to climate variability depends very much upon local initiatives and the involvement of actors at the local level.
28	Rahman, M. H. & Alam, K. (2016). Forest Dependent Indigenous Communities' Perception and Adaptation to Climate Change through Local Knowledge in the Protected Area-A Bangladesh Case Study *Climate* 4(1), 12	To explore the perception and knowledge of indigenous communities towards climate change and to investigate and identify the adaptation measures that are practised meaningfully by the indigenous communities to strengthen community resilience.	Model of adaptation dynamics (Platform for Agrobiodiversity Research; PAR, 2010)	Household surveys, focus group discussions, key informant interviews, and observation methods were used to unveil the climatic events, impacts and related	Mixed: quantitative and qualitative Analysed using SPSS (descriptive statistics)	Khasia, Tripura and Garo in the Lawachara National Park of Northeastern Bangladesh.	Bangladesh Institute of Social Research (BISR) Trust	This study recognized 29 adaptation strategies and divided them into six management categories, drawing on their local knowledge of the natural resources and other technologies. The study reveals that, although adaptation strategies through land use and land cover changes are not enough to sustain their livelihoods, the tactics help them to reduce the risk of, and increase food security and community resilience against, climate change.

				adaptations.				
29	Saboohi, R., Barani, H., Khodagholi, M., Sarvestani, A. A., & Tahmasebi, A. (2019). Nomads' indigenous knowledge and their adaptation to climate changes in Semirom City in Central Iran. *Theoretical and Applied Climatology*, *137*(1), 1377-1384.	To assess the role of nomadic indigenous knowledge and insights into utilization of summer rangelands gained on adaptation to climate change	None specified	In-depth group interviewing, exploratory methods, interviews	Case study	Nomads in Semirom	None received	The results showed that people of Qashqai tribes have a thorough knowledge of climate change and have adopted long-term adaptive solutions such as building cement-block houses and water storage ponds as well as changing the migration routes and locations to cope with the adverse consequences of climate change.
30	Salim, S. S. & Monolisha, S. (2019). Indigenous Traditional Ecological Knowledge of Tamil Nadu Fisher folks: to Combat the Impact of Climate and Weather Variability. *Indian Journal of Traditional Knowledge*, 18(4), 781-792	Explores the significant role of indigenous traditional ecological knowledge (ITEK) in weather forecast prediction and fishing related activities	Framework of seasonal ecological calendar	Interview, focus group discussion	Qualitative	Fisher folks in 33 coastal villages of Tamil Nadu	Earth System-Science Organisation – Indian National Centre for Ocean Information Services, Hyderabad, India	an integration framework of ITEK and scientific innovations… it is crucial to integrate ITEKs in the scientific seasonal forecasting of environmental changes and climatic events to facilitate better decision making policies on adaptation and mitigation strategies
31	Sarkar, S., Padaria, R. N., Vijayragavan, K., Pathak, H., Kumar, P., & Jha, G. K. (2015) Assessing the Potential of Indigenous Technological Knowledge (ITK) for Adaptation to Climate Change in the	Objective of documenting and assessing the potential of indigenous knowledge towards adaptation to climate change	None specified	Documentation of ITK was done using both primary and secondary source of	Descriptive survey and anthropological approach of participatory study	200 Farmers in Himachal Pradesh and Rajasthan representing Himalayan and Arid ecosystems respectively	INSPIRE fellowship programme of the Department of Science and Technology, Indian Agricultural Research Institute	The major documented indigenous knowledge was 'mind' cultivation, 'chal' to harvest water, 'apple paste' to control diseases and 'siddu' to protect from extreme cold in Himachal Pradesh. Similarly, the major documented indigenous

	Himalayan and Arid ecosystems. *Indian Journal of Traditional Knowledge*, 14(2), 251-257			informatio n.				knowledge of Rajasthan were-Khadin' farming system to manage drought, 'kanabandi' to manage soil and wind storm, 'tanka' to harvest water, 'jupka' and 'kothi' for storing the grain and feed, etc. Beside these, the people of both the ecosystems observed the movement of insects and animals (butterfly, ant, and termite) to forecast the rainfall and other climatic parameter.
32	Siggia, D., Battista, A., Tinervia, S. (2016). The role of indigenous knowledge in disasters and climate change resilience. A field study in surkhet and dailekh districts in the mid-western region of Nepal. *Innovation, Entrepreneurship and Digital Ecosystems*, 1704-1722	To study the role of indigenous knowledge on climate change and disaster resilience of local communities living in Surkhet and Dailekh districts of Nepal.	Concept of resilience	Focus Group Discussion s and transect walks	Qualitative	local communitie s living in Surkhet and Dailekh districts of Nepal.	None indicated	the sampled communities living in Surkhet and Dailekh have an extensive awareness of the reasons behind the occurrence of natural disasters and climate changes, while preserving their beliefs and local practices to cope with the natural challenges. Nevertheless, the indigenous coping mechanisms and adaptation practices proved to be not resilient; the practices that might have worked in the past are not effective anymore, and the few indigenous coping mechanisms are too weak to be a reliable help when a disaster strike.

33	Son 1: Son, H. N., Kingsbury, A., & Hoa, H. T. (2020). Indigenous knowledge and the enhancement of community resilience to climate change in the Northern Mountainous Region of Vietnam. *Agroecology and Sustainable Food Systems*, 1-24.	This study illustrates unique ways that indigenous knowledge and agroecological farming practices can increase social, economic, and environmental resiliency, mitigate risk, and strengthen livelihoods in marginalized communities	The concepts of socio-ecological resilience and adaptive capacity	Household surveys, indepth interviews and focus group discussions	mixed qualitative methods	384 households in ten villages in rural Bac Kan Province, Vietnam	No funding received	systems that incorporate native crops in ways that provide resistance to drought, improve water-use efficiency, benefit the soil, minimize agrochemical use, preserve culinary traditions, support gender equality, and increase the incomes of farm families living near the poverty line
34	Son 2: Son, H. N., Chi, D. T. L., & Kingsbury, A. (2019). Indigenous knowledge and climate change adaptation of ethnic minorities in the mountainous regions of Vietnam: A case study of the Yao people in Bac Kan Province. *Agricultural Systems*, *176*, 102683.	To gather indigenous knowledge on native crop varieties and animal breeds, weather forecasting, and the timing and location of cultivation practices.	None specified	Data for this study was collected through surveys, interviews, participant observation, and focus group discussions	Case study 90 households	Yao ethnic minority in Bac Kan Province of Vietnam.	International Foundation for Science, Stockholm, Sweden And Asia Pacific Network for Global Change Research	This study documents unique examples of how indigenous knowledge is being used alone and blended with scientific knowledge to make accurate decisions and help local communities adapt to climate change.
35	Theodory, T. F. (2020). Understanding the relevance of indigenous knowledge on climate change adaptation among mixed farmers in the Ngono River Basin, Tanzania. *African Journal of Science, Technology, Innovation and*	Assesses the IK used by the mixed farmers in Tanzania to adapt to the impacts of climate change	Indigenous knowledge and development	primary and secondary sources including focus group discussions, key informant interviews	Qualitative case study	Missenyi and Muleba Districts, Kagera Region along the Ngono River Basin in Tanzania	German Academic Exchange Service	The findings established that IK is mostly used in a situation of long drought season, infestation of diseases and pests for both livestock and crops as well as during occurrence of strong winds. In such circumstances, most oft-cited adaptation practices used include farming and

	Development, *13*(1), 51-59.			, observation and desk reviews				grazing in wetlands, growing of drought resistant crops, using locally made pesticides, and grain storage, to mention but a few
36	Tlhompho, G. (2014). African indigenous food security strategies and climate change adaptation in South Africa. *Journal of Human Ecology*, *48*(1), 83-96.	To examine the efficacy of African indigenous food security strategies and climate change in South Africa	None specified	Interview, focus group discussion, observation	Case study	Indigenous knowledge holders and practitioners in Ganyesa village	National Research Foundation	One of the major limitations of IKS sustainability is the lack of interest among the younger generations in IKS due to exposure to western knowledge systems and the impact of globalisation through mass media. IK should be documented for its preservation and introduced in the formal educational system and developmental policy including agricultural campaigns to promote public knowledge and awareness on the importance of IKS for sustainable development.
37	Ubisi, N. R., Kolanisi, U., & Jiri, Obert (2020). The Role of Indigenous Knowledge Systems in Rural Smallholder Farmers' Response to Climate Change: Case Study of Nkomazi Local Municipality, Mpumalanga, South Africa *Journal of Asian and African Studies*	to investigate indigenous weather and climate indicators used by smallholder farmers and the role of indigenous knowledge in their farming systems.	None specified	focus group discussions and key informant interviews	qualitative methods: Case study	Nkomazi Local Municipality, Mpumalanga, South Africa	National Research Foundation (NRF)	The findings indicated that farmers observed animal behaviour, plants, atmospheric indicators and human ailments to predict weather.

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38	Van Huynh, C., Le, Q. N. P., Nguyen, M. T. H., Tran, P. T., Nguyen, T. Q., Pham, T. G., ... & Trinh, H. N. (2020). Indigenous knowledge in relation to climate change: adaptation practices used by the Xo Dang people of central Vietnam. *Heliyon*, *6*(12), e05656.	Investigates the role of the traditional agricultural practices of the Xo Dang ethnic minority groups in Central Vietnam and provides insights into the factors that influence farmers to adopt these practices in response to climate change.	None specified	Primary data was obtained through three focus group discussions and 87 household surveys involving the Xo Dang people through face-to-face semi-structured interviews	Mixed: Survey, focus groups and interview	the Tra Doc commune, Bac Tra My district, Quang Nam province, Central Vietnam	Ministry of Education and Training of Vietnam	Xo Dang people were highly aware of climate change risks and had, in response, employed their current adaptation practices. The major adaptation strategies implemented by the Xo Dang people included the use of flora and fauna indicators, native plant varieties, the adjustment of planting calendars, irrigation practices, and the application of intercropping. Understanding indigenous knowledge plays a fundamental role in the processes of deciding the appropriate adaptation techniques more effectively and making use of human resources.
39	Walshe, R., & Argumedo, A. (2016). Ayni, Ayllu, Yanantin and Chanincha The Cultural Values Enabling Adaptation to Climate Change in Communities of the Potato Park, in the Peruvian Andes. *Gaia-Ecological Perspectives for Science and Society*, 25(3), 166-173	To determine, survey and understand the distinct cultural components that influence climate change adaptation in the indigenous communities of the Potato Park, as well as their distribution and ownership.	Theory and literature on Andean culture	Informal discussion with gatekeepers, focus group discussion, survey questionnaire, secondary data, ethnographic observation of the	Mixed: qualitative and quantitative	Communities of the Potato Park, Cusco Region of Peru	None indicated	Rural communities studied are shown to possess a number of cultural values, in Quechua known as ayni, ayllu, yanantin and chanincha. These form the foundation of the community's ability to successfully respond to the challenges presented by climate change. The limited current adaptation strategies and methods not only neglect

				communities				these values but also undermine and erode them.

Table S2. Summary data of descriptive statistics

Aim – E = Evaluative; D = Descriptive; X = Explanatory
Data source – I = Interview; FGD = Focus Group Discussion; S = Survey; SD = Secondary Data; A = Artefacts; O = Observation; PA= Participatory Approaches; TW = Transect Walk
Analysis – QnQl = Quantitative and Qualitative; Ql = Qualitative
Sample – H = Household; HH = Head of Household; E = Experts/people with specialised knowledge/practice; R = Residents/community members; KI = Key Informants; [R in * villages] = unspecified number of participants
Scale – C = Community; I = Individual/Household
Sector – Agric (C) = Agriculture (Crops) ; Agric (L) = Agriculture (Livestock); Agric (C + L) = Agriculture (Crops + Livestock); WRM = Water Resource Management; DRM = Disaster Risk Management; F = Forestry; C = Culture;
Term – IK = Indigenous Knowledge; LK = Local Knowledge; TEK = Traditional Ecological Knowledge; TK = Traditional Knowledge; ITEK = Indigenous Traditional Ecological Knowledge; LEK = Local Ecological Knowledge; ITK = Indigenous Technological Knowledge; IWCKS = Indigenous Weather and Climate Knowledge System; AP = Asset Portfolio; OT = Oral Traditions

	Author	**Country**	**Aim**	**Data source**	**Analysis**	**Sample**	**Scale**	**Sector**	**Term**
1	Akhter	Bangladesh	E	I, FGD, S	QnQl	59 H	C	Agric (C)	IK
2	Balehegm	Ethiopia	D	I, FGD, SD	Ql	85 H	C	Agric (L)	IWCKS
3	Boillat	Bolivia	X	I	Ql	28 H	I	Agric (C)	IK
4	Cordoba Vagas	Colombia	E	I, FGD, S, O	QnQl	397 R	I	Agric (C)	TK
5	David	Indonesia	D	I, S, A, O	QnQl	53 E	C	WRM	IK
6	De la Riva	Bolivia	D	I, O, SD	Ql	30 R	I	Agric (C)	TEK
7	Derbile	Ghana	E	I, FGD, S	QnQl	131 H	I	Agric (C)	IK
8	Dimelu	Nigeria	E	I, FGD, O	QnQl	60 HH	I	Agric (L)	IK
9	Ebhuoma	Nigeria	X	I, FGD	Ql	[R in 3 villages]	I	DRM	AP
10	Egeru	Uganda	D	I, FGD, O	Ql	52 H	C	Agric (C)	IK
11	Elia	Tanzania	X	I, FGD, S	QnQl	84 E	I	Agric (C)	IK
12	Hooli	Namibia	D	I, FGD, S	QnQl	282 H	C	DRM	IK
13	Hosen 1	Malaysia	X	I, O	Ql	10 KI	C	Agric (C + L)	TEK
14	Hosen 2	Malaysia	X	I, O	Ql	31 KI	C	Agric (C + L); F; C	TEK
15	Iticha	Ethiopia	X	I, FGD, S, O	QnQl	100 R	C	DRM	IK
16	Janif	Fiji	D	I, O	Ql	[R in 27 villages]	C	DRM	OT
17	Jiri	Zimbabwe	D	I, FGD, S	QnQl	100 E	I	Agric (C)	IK or LK
18	Kpadonou	Benin	X	-	Ql	-	C	Agric (L)	LK
19	Kupika	Zimbabwe	X	I, FGD, S	QnQl	332 H	I	DRM	LEK
20	Mapfumo	Zimbabwe	X	I, S, PA, TW	QnQl	200 H	C	Agric (C)	IK
21	Mugambiwa	Zimbabwe	E	I	Ql	30 H	C	Agric (C)	IK
22	Napogbong	Ghana	D	I, FGD, O, A	Ql	92 E	I	Agric (L)	IK
23	Nelson	Philippines	D	I, FGD, O	Ql	[R in 2]	C	Agric (C), C	IK
24	Nkomwa	Malawi	E	I, FGD, S, SD	QnQl	64 R	C	Agric (C + L)	IK or TK
25	Nzeadibe	Nigeria	D	I, FGD, S, TW	QnQl	400 HH	I	Agric (C)	IK
26	Opare	Ghana	D	I, FGD, O	QnQl	49 R	C	WRM	IK
27	Oviedo	Brazil	X	I, FGD	Ql	50 R	C	Agric (C + L)	LEK

28	Rahman	Bangladesh	D	I, FGD, S, O	QnQl	93 HH	C	F	LK
29	Saboohi	Iran	E	I	Ql	56 E	C	Agric (L)	IK
30	Salim	India	X	I, FGD	Ql	[R in 33 villages]	C	Agric (L)	ITEK
31	Sarkar	India	E	S, SD, PA	QnQl	200 E	C	Agric (C)	ITK
32	Siggia	Nepal	E	FGD, TW	Ql	[R in 2 villages]	C	DRM	IK or LK
33	Son	Vietnam	X	I, FGD, S	QnQl	384 H	C	Agric (C + L)	IK
34	Son 2	Vietnam	D	I, FGD, S, O	Ql	90 H	C	Agric (C + L)	IK
35	Theodory	Tanzania	E	I, FGD, O, TW, SD	Ql	[R in 4 villages]	C	Agric (C + L)	IK
36	Tlhompho	South Africa	E	I, FGD, O	Ql	40 KI	C	Agric (C)	IK
37	Ubisi	South Africa	X	I, FGD	Ql	90 E	I	Agric (C)	IK
38	Van Huynh	Vietnam	X	I, FGD, S	QnQl	104 R	I	Agric (C)	IK
39	Walshe	Peru	X	I, FGD, S, SD	QnQl	36 R	C	Agric (C)	TK