BIBLIOGRAPHIC REFERENCES	TERRITORY OF ANALYSIS	OBJECTIVE	TYPE OF AGROECOSYSTEM	METHODOLOGICAL APPROACHES	TECHNIQUES AND TOOLS	DIMENSIOS ADDRESSED	FARMERS' PERCEPTION	RESILIENCE / ADAPTATION
Title: Perception of and adjustment to adverse weather events among smallholder cofee farmers in Rwanda Authors: ohanna Gather · Meike Wollni - Publication date: July 19, 2023	Rwanda	This study was conducted with smallholder coffee farmers in Rwanda, focusing on their perceptions of adverse weather events and their adaptive responses.	Diversity of agroecological cropping systems (coffee farmers) (Agroecological)	Mixed; Qualitative and Quantitative	Initial contact was made with coffee farmer group leaders, followed by household interviews with the farmers. The research questionnaire collected information on family demographics, coffee production and marketing, production of different coffee crops, use of inputs at the plot level, and certification. It	Social, Cultural, Economic, and Environmental	Short or delayed rainy season and long periods of drought	Income diversification through the cultivation of other crops and trees for shading.
Title: Factors associated with smallholders' uptake of intercropping in Southeast Asia: A cross-country analysis of Vietnam, Laos, and Cambodia / Authors: Thanh Mai Ha, Pisidh Voe, , Sayvisene Boulom, Thi Thanh Empréstimo Le, Curvo Duan Dao, Fu Yang d, Xuan Phi Dang. - Publication date: August	Vietnam, Laos and Cambodia	This study aimed to investigate the association between a range of psychological drivers and the adoption of intercropping among smallholder farmers. These include perceptions of (1) social support, (2) climate change severity, (3) climate	Various consortia—maize and legumes such as soybean, red peanut, and small peas—and fruit trees or intercrops between fruit trees, coffee, and cereals; pumpkin and loofah are often intercropped with rice and maize (hybrid).	Mixed; Qualitative and Quantitative	Household questionnaires covering sociodemographic characteristics and intercropping practices. The results suggest that farmers' adoption of climate adaptation and mitigation measures is linked to perception, information, and knowledge.	Social, Cultural, Agricultural, Environmental, and Economic	Not expressed in discourse, only in comparative results. (The perceived impact of climate change was also significantly associated with the tendency to adopt intercropping in all countries studied.)	Use of intercropping as a mechanism for resilience in production systems.
Title: Unraveling farmers' interrelated adaptation and mitigation adoption decisions under perceived climate change risks. / Authors: María Rodríguez-Barillas, Marijn Poortvliet, Laurens Klerkx - Publication date: June, 25, 2024.	Costa Rica	This study aims to identify key risk-related factors that influence multiple adaptation and mitigation strategies through the adoption of Climate-Smart Agriculture (CSA) technologies to reduce vulnerability to climate change. It	Coffee farming with possible climate adaptation methods (hybrid)	Mixed; Qualitative and Quantitative	Focus group; sociodemographic questionnaire, and data collection application (Qualtrics software)	Social, Cultural, Economic, and Environmental	Not expressed in discourse or reports, only in comparative results. Practices used as mitigation or adaptation to climate change.	Adopted strategies: soil conservation, planting of legumes, reduction of inputs.
Title: Using local knowledge to reconstruct climate-mediated changes in disease dynamics and yield—A case study on Arabica coffee in its native range. / Authors: Gather e Wollni - Publication date: February, 20, 2024.	Gomma and Gera (Ethiopia)	To understand the relationships between climate change, disease dynamics, and coffee production in one of the centers of indigenous diversity of Arabica coffee in southwestern Ethiopia, by exploring past changes	Family and commercial coffee farming (minimal management in natural forest to moderate management on small rural properties and intensive management in commercial coffee plantations) (traditional)	Mixed; Qualitative and Quantitative	Interviews with farmers and commercial plantation managers, and statistical analysis (R)	Social and Environmental	Changes in the incidence of pests and diseases over the years due to prolonged dry seasons and increased temperatures.	Not reported

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Title: Perceptions of Deficiencies in the Basic Conditions for Farm Management and Quality of Life in Coffee-Growing Households: A Panel Analysis of a Rural Community in Households: A Panel Analysis of a Rural Community / Authors: Anna Lina Bartl - Publication date: 2024	Uganda	This article identifies categories and levels of deficiencies in coffee farming conditions and in the quality of life of coffee-growing households. It is based on quantitative and qualitative responses from 360 smallholder coffee	Small coffee plots (hybrid)	Mixed; Qualitative and Quantitative	Quantitative: (exploratory principal component analysis to select indicators) Qualitative: (questionnaires on how climate change and other externally influenced conditions impact perceived constraints)	Social, Cultural, Economic, Environmental, Vulnerabilities	Does not present any discourse; it highlights some aspects such as access to water, technical assistance, market reliability, and access to resources and technologies.	Not reported
Title: From climate perceptions to actions: A case study on coffee farms in Ethiopia / Authors: Xênia Gomm, Biruk Ayalew, Kristoffer Hylander, Francesco Zignol, Lowe Börjeson, Ayco JM Tack - Publication date: February, 25, 2024.	Gomma and Gera (Ethiopia)	The main objective of this study was to examine the relationship between climate change, farmers' perceptions of climate change, and management adaptation. To this end, 56 coffee farmers were interviewed, and	Coffee is grown within natural forest, smaller forest fragments, and forest edges (agroecological)	Mixed; Qualitative and Quantitative	Interviews, analysis of secondary climate data, and statistical analyses (statistical tests including the Mann–Kendall trend test)	Social and Environmental	Temperatures, duration of dry spells	Farmers in warmer temperatures more frequently apply organic matter and implement soil and water conservation practices, while farmers in cooler areas more often diversify their crops, manage shade levels, and improve coffee varieties. (Not reported but evidenced).
Title: Co-designing a research agenda for climate adaptation in El Salvador's coffee sector: A transdisciplinary perspective / Authors:: Jose Daniel Teodoro, Suzanne Marselis, Antonella Maiello, Achim Hager - Publication date: January, 30, 2024.	El Salvador	To (i) generate collective awareness of experiences related to climate impacts and (ii) outline a research agenda that can facilitate successful climate change adaptation strategies.	Coffee farming (hybrids)	Mixed; Qualitative and Quantitative	Secondary data (documentary), in-depth informal conversations, questionnaires, field visits, small group discussions, and a workshop. Statistical data (mean and standard deviation).	Social and Environmental	The climate in El Salvador has changed noticeably in recent decades, and more intense climatic events have been experienced in recent years. Most survey respondents are aware of the risks of climate change for the coffee sector and the need for adaptation.	Diversification of agricultural crops is essential to increase resilience to climate change.
Title: Are Vietnamese coffee farmers willing to pay for weather index insurance? / Authors: Le Lan, Shahbaz Mushtaq, Qingxia (Jenny) Wang, Angelica Barlis, Aline Deniau, Vivekananda Mittahalli Byrareddy, Huynh Tan Anh, Kees Swaans - Publication date: December, 12, 2023.	Vietnam	The main objective of this phase is to explore market demand and raise awareness of Weather Index Insurance (WII), introducing its concept and how it works through a pilot phase for the local community. This study was	Coffee farming (conventional).	Quantitative	Questionnaires (statistical description)	Social, Economic, Environmental, and Agricultural	The impacts of drought on yield and income loss were perceived as the highest among all extreme climatic events. Drought was experienced by the majority of the surveyed farmers (91%), followed by excessive rainfall (23%), high temperatures (13.9%), and strong winds (6%). Respondents reported that drought led to an average	Unreported strategies; only an indication of the use of insurance as a damage reduction strategy.

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Title: What determines the acceptance of Climate Smart Technologies? The influence of farmers' behavioral drivers in connection with the policy environment. / Authors: María Rodríguez-Barillas, Laurens Klerkx, P. Marijn Poortvliet - Publication date: November, 16, 2023.	Costa Rica	This article proposes a model that integrates behavioral drivers and policy mix evaluation influencing the acceptance of Climate-Smart Agriculture (CSA) technologies. The objective is to examine how farmers' behavioral	Coffee farming (?)	Mixed; Qualitative and Quantitative	Focus group, recording, interview transcription, statistical analyses (R, independent and dependent variables)	Economic and Environmental	Not reported	Not reported
Title: Small-scale coffee farmers' perception of climate-adapted attributes in participatory coffee breeding: A case study of Gayo Highland, Aceh, Indonesia. / Authors: Abdul Muis Hasibuan , Enny Randriani , Dani Dani , Tri Joko Santoso , Apri Laila Sayekti , Nur Kholilatul Izzah , Budi Martono , Meynarti Sari Dewi Ibrahim	Indonesia	This study aims to assess farmers' perceptions of the importance of climate-related attributes of local coffee varieties developed through a participatory breeding program in Gayo Highland, Aceh, Indonesia. Using survey data	Three altitude categories, namely 900, 1,300, and 1,500 meters above sea level, in order to capture variation in coffee growth and yield performance across different altitudes (traditional).	Mixed; Qualitative and Quantitative	Interviews collecting demographic data and perceptions, analyzed using the Fishbein method	Social, Economic, Environmental, and Cultural	Importance of the attributes assigned to the varieties: early harvest maturity, productivity, coffee bean size, resistance to the coffee berry borer, and flavor.	Cultivation of species resistant to pests, diseases, and drought, with greater adaptability to drought, intense rainfall, and prolonged rainy periods, as well as productivity and bean size.
Title: An appraisal on the determinants of adaptation responses to the impacts of climate variability on coffee Production: Implication to household food security in Nensebo Woreda, Ethiopia / Authors: Desalegn Yayeh Ayal a, Ansha Nure, Bechaye Tesfaye, Kassahun Ture, Tadesse Terefe Zeleke. - Publication date: April, 24, 2023	Ethiopia	To examine the determinants of adaptation responses to climate variability in coffee production and their implications for household food security in Nensebo Woreda, Ethiopia.	Coffee farming in agroecological zones (agroecological)	Mixed; Qualitative and Quantitative	Interviews, focus groups, thematic content analysis, descriptive statistics, and econometric analysis methods	Social, Economic, Cultural, and Environmental, Food Insecurity	Temperatures and droughts	Improved coffee varieties, irrigation, soil conservation, crop diversification, agroforestry practices, weather information, and shade management.
Title: Smallholder coffee-based farmers' perception and their adaptation strategies of climate change and variability in South-Eastern Ethiopia. / Authors: Tariku Olana Jawo, Nikola Teutscherová, Mesele Negash, Kefyalew Sahle, Bohdan Lojka. - Publication date: January, 08, 2023.	Sidama, Ethiopia	(i) To assess perceptions of climate change and their relationship with adaptation strategies adopted by smallholder coffee farmers along elevation gradients in the Sidama Regional State, Ethiopia, one of the country's main	Smallholder coffee agroecosystems (agroecological)	Mixed; Qualitative and Quantitative	Interview, focus group, field observation, statistics (Severity Index, Mann–Kendall test, and Weighted Mean), and meteorological data	Social, Economic, and Environmental	Temperature and precipitation, changes in coffee production such as fruit quality, maturation, and increased incidence of pests and diseases.	The adoption of agroforestry systems/tree planting, application of organic fertilizer/compost, soil conservation, modification of the agricultural calendar, crop diversification, among other strategies that appeared less frequently.

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Title: Farming adaptation strategies against climate variability. Coffee case, municipality of Huehuetla, State of Puebla, Mexico. / Authors: Claudia Gonzalez, José Pedro Juárez Sánchez, Benito Ramirez Valverde, Jose Arturo Mendez Espinoza. - Publication date: January, 2023	Mexico	To analyze the adaptation strategies adopted by smallholder coffee farmers in response to climate change.	Smallholder coffee agroecosystems (hybrid)	Mixed; Qualitative and Quantitative	Interviews using questionnaires with mostly closed-ended questions, and application of non-parametric Chi-square (χ^2) and parametric Student's t-test.	Social, Economic, Environmental, and Management	Temperature related to reduced production, leaf scorching, poor fruit formation, and uneven ripening; extreme events; rainfall impacted them through landslides.	Reduction or modification of the agricultural work routine, especially weed control, phytosanitary management, and weeding. In the case of phytosanitary control, one of the strategies used by producers is the use of improved varieties. They are also developing agricultural strategies, such as planting other crops to obtain additional income and food, and the use of shade trees, which are
Title: Percepción de los efectos del cambio climático y prácticas de adaptación de los caficultores del Estado de Puebla, México. / Authors: Hernández-Castán, Tapia-Hervert Calderón. - Publication date: March, 02, 2023.	Puebla / Mexico	The study aimed to generate information for different coffee-producing regions in the state of Puebla, regarding farmers' characteristics, experienced climate impacts, their perceptions of these impacts, and the adaptation practices	Smallholder coffee agroecosystems (hybrid)	Mixed; Qualitative and Quantitative	Semi-structured interviews, descriptive statistics, categorization, and force field analysis to identify strategies	Social, Economic, Environmental, and Agricultural	Drought, landslides, delayed rainfall, frost, and fires	Mowing and clearing, terrace formation, contour farming, and the use of materials such as wood for containment.
Title: Smallholder coffee producer's perception to climate change and variability: the evidence from Mana district, South Western Ethiopia. / Authors: Alemu Tesfaye. - Publication date: November, 05, 2021.	Ethiopia	The objective is to explore and address existing research gaps regarding smallholder coffee farmers' perceptions of climate change and the socioeconomic factors influencing them in the study area.	Zone of different coffee agroecosystems (agroecological)	Mixed; Qualitative and Quantitative	Interviews, focus groups, secondary data (articles and technical notes), and statistical data (statistics such as mean, variance, minimum and maximum, and percentage and frequency).	Social, Economic, Environmental, and Agricultural	52.2% of households agreed that precipitation has decreased, while 26.3% disagreed and 21.5% were neutral regarding the decrease in rainfall. A total of 54.5% agreed that temperatures have increased. About 49.1% of households disagreed that there has been no change in temperature, while 22.0% and 18.9% of	Not reported
Title: Percepción y adaptación de productores de café al cambio climático en Puebla y Oaxaca, México. / Authors: José Luis Jaramillo-Villanueva1, Jesús Guerrero-Carrera, Samuel Vargas-López, Ángel Bustamante-González. - Publication date: February, 27, 2022.	Puebla, Mexico	The objective of this study was to analyze the factors explaining coffee farmers' perceptions of and adaptation to climate change in the Mazateca region of Oaxaca and Cuetzalan, Puebla.	Smallholder coffee agroecosystems (conventional)	Mixed; Qualitative and Quantitative	Individual interviews, regression model	Sociodemographic characteristics, producer characteristics, coffee production process, costs and revenues, associations, and perception and adaptation to climate change.	Increase in pests and diseases, excessive precipitation, reduced production, irregular rainfall, and strong winds	Change in coffee varieties to those more resistant to temperature and to the incidence of certain pests and diseases

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Title: A Coffee Yield Next-Generation Forecast System for Rain-Fed Plantations: The Case of the Samala Watershed in Guatemala. / Authors: DIEGO PONS, ÁNGEL G. MUÑOZ, LÍGIA M. MELENDEZ, E CARMEM GONZALEZ ROMERO MARIO HOCOOJ, XANDRE COURIO,ROSÁRIO GÔMEZ. - Publication date: October	Samalá, Guatemala	In this study, we developed a model based on the initial identification of the most relevant climatic variable for farmers in the region. The model was then cross-validated using statistical methods, and its output was evaluated against	Agroecosystems in volcanic regions (hybrid)	Mixed; Qualitative and Quantitative	Field notebook, conversations and notes from requested information, questionnaires, and descriptive statistics.	Cultural, Agricultural, and Environmental	Changes in regional precipitation and its influence on coffee productivity, changes in temperature	Coffee farmers manage risks associated with soil erosion, landslides, subsidence, and damage to roads and infrastructure, as indicated by technical advisors in the region. (No reports of concrete experiences with strategies)
Title: Climate change risk perception and adaptive behavior of coffee farmers: the mediating role of climate-related attitudinal factors and moderating role of self-efficacy. / Authors: Tuyen Thi Tran· Hong Chen. - Publication date : November, 16, 2021.	Honduras	The objective of this study is to identify the impact of climate change risk perception (CCRP) on the adaptive behavior of coffee farmers in Honduras.	Small smallholder coffee agroecosystems (hybrid)	Mixed; Qualitative and Quantitative	Questionnaires based on purposive sampling and coefficients	Social and Agricultural	Concern or lack of concern about climate change	Not reported
Title: Leveraging communities' network strengths to support climate change adaptation information-sharing: a study with coffee farmers in Risaralda, Colombia. / Authors: Jessica Eise, Natalie J Lambert, Eric C. Wiemer. - Publication date: October, 01, 2021.	Colombia	In this study, we measured farmers' information-sharing ego networks and their information-related attributes through first-person interviews, in collaboration with local experts experienced in engaging with coffee farmers in the	Coffee agroecosystems (?)	Qualitative	Semi-structured interviews	Demographics, ego networks on climate change, and information networks	Access to information, climate bulletins, TV, telephone, and text messages	Not reported
Title: Climate Change Perceptions by Smallholder Coffee Farmers in the Northern and Southern Highlands of Tanzania. / Authors: Suzana G. Mbwambo, Sixbert K. Maurice, e Akwilin JP Tarimo. - Publication date: June, 2, 2021.	Tanzania	The objective of this study was to assess coffee farmers' perceptions of climate change, taking into account their demographic, physical, and cultural differences.	Diverse coffee agroecosystems (agroecological)	Mixed; Qualitative and Quantitative	Semi-structured questionnaires, secondary climate data (precipitation and temperature), and descriptive statistical analyses, Chi-square test	Demographic variables, agricultural systems, farmers' perception of climate change, climate change awareness, and external factors such as extension services and meteorological information.	Increase in temperature and decrease in precipitation, prolonged harvest period, delayed flowering, reduced yield, crop failure, increased incidence of pests and diseases	Soil and water conservation practices included the use of terraces, cut-off drains, and mulching, as well as the application of mulch in plantations. Farmers also began planting coffee varieties tolerant to diseases such as rust; however, most farmers who perceive these changes still cultivate older coffee varieties. Farming households that perceived climate change used organic fertilizers. (Shade tree

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Title: Farmers intention to adopt sustainable agriculture hinges on climate awareness: The case of Vietnamese coffee. / Authors: Nga Nguyen & Evangelia G. Drakou. - Publicatio date: March, 26, 2021.	Vietnam	This study aims to understand the factors influencing farmers' decisions to adopt sustainable agricultural practices in the context of climate change in a low-income country. The Theory of Planned Behavior (TPB) was applied and adapted to fit	Small coffee farms (conventional)	Mixed; Qualitative and Quantitative	Interviews with farmers and key representatives, confirmatory factor statistical analysis	Socioeconomic, Agricultural Management, Climate Perception, Socio-Psychological	Increase in temperature, longer dry season, increased precipitation, and abnormal rainy seasons, which are supported by climate data from the NCHMF	No information provided, only how likely certain farmers are to adopt sustainable practices in coffee farming
Title: Impact of drought associated with high temperatures on Cofea canephora plantations: a case study in Espírito Santo State, Brazil. / Authors: Luan PeroniVenanci, Roberto Filgueiras, Everardo Chartuni Mantovani, Cibele Hummel doAmaral, Fernando França da Cunha, Francisco Charles dos Santos Silva	Brazil	The objective of this study was to conduct a technical-scientific analysis of the actual impact of drought associated with high temperatures and solar radiation on *Coffea canephora* (Pierre ex Froehner) plantations located in the northern, northwestern, and	Coffee-producing regions in Canilon in the north and northeast of Espírito Santo, Brazil (hybrid)	Quantitative	Data collection from secondary sources (meteorological data from official websites/INPE/IBGE) and descriptive statistics	Technical-scientific basis of the actual impact of drought associated with high temperatures and irradiation on conilon coffee plantations.	Not reported	The adoption of agroforestry systems and the construction of small reservoirs can be useful to alleviate these climatic effects, reducing the risk of losses in coffee production and contributing to the sustainability of crops in the state of Espírito Santo.
Title: Climate Change Adaptation, Food Security, and Attitudes toward Risk among Smallholder Coffee Farmers in Nicaragua. / Authors: Aniseh S. Bro . - Publication date: August, 26, 2020.	Nicaragua	This study uses descriptive analyses and experimental risk games to assess coffee farmers' preferences and attitudes in the context of their adaptation to climate change.	Coffee agroecosystems in areas of climate vulnerability (hybrid)	Qualitative	Data from indicators on social aspects, climate vulnerability, and food security, and interactive games	Social, Economic, Environmental, and Agricultural Management	Perception of changes in temperature, precipitation, and yield	Their farming practices, which are responses likely to help them adapt to changes, are not always easy to adopt—not only because there is uncertainty about how successful they will be, but also because farmers must rely on knowledge and institutional support to implement these measures.
Title: Impactos das mudanças climáticas e estratégias de adaptação em Região Trans-Himalaia do Nepal. / Authors: Dinesh Adhikari, Ritika Prasai, Sabina Lamichhane, Deepak Gautam, Sonia Sharma, Suman Acharya. - Publication date: December, 2021.	Nepal	To examine locally experienced climate change impacts and the adaptation practices adopted in the Muktinath Valley, Mustang District, Nepal. A mixed-methods approach was employed to collect both qualitative and quantitative data	Mountain farming/cropping (hybrid)	Mixed; Qualitative and Quantitative	Random sampling, interviews with key informants (N = 10), and focus group discussions (N = 2), and trend analysis	Agricultural and climate perception, livelihood, physical health, and environmental health.	Agriculture, water resources, non-timber forest products, and human health have been extremely impacted due to climate change. In addition, various natural disasters, such as landslides, avalanches, the spread of invasive species, and an increase in the number of pests and flies, have been experienced and reported	The construction of an artificial pond, pest and weed control, changes in planting and harvesting times, and changes in cropping patterns were the main adaptation practices adopted by the local population. Likewise, the lack of technical and financial resources was the main constraint to the adoption of adaptation practices.

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Title: Perceptions of climate change and its impacts: a comparison between farmers andinstitutions in the Amazonas Region of Peru. / Authors: Laura Altea. - Publication date: March, 31, 2019.	Peru	This study aims to explore perceptions and interpretations of climate change and its impacts from two different perspectives: regional institutions and smallholder farmers. Its novelty lies in simultaneously examining different	Rural properties in the Peruvian Amazon region, with coffee intercropped mainly with citrus fruits, bananas, and pitaya. Other cultivated products include sugarcane (only at higher altitudes) and subsistence crops such as maize, legumes, and various horticultural products (agroecological).	Qualitative	Participatory workshop. DRP, semi-structured interviews, participatory workshops (with institutions and farmers)	Environmental, related to climate change and its impacts on coffee cultivation	Most of them described a considerable increase in temperatures compared to the past. An increase in the frequency and intensity of extreme events was reported, especially related to heavy rainfall causing landslides and, in some cases, flooding, crop failures, destruction of houses, and displacement of people. They also	Not reported
Title: Framing vulnerability and coffee farmers' behaviour in the context of climate change adaptation in Nicaragua. / Authors: Sonia Quiroga, Cristina Suárez, Juan Diego Solís, Pablo Martinez-Juarez. - Publication date: November, 1, 2019.	Nicaragua	Este artigo analisa as percepções dos agricultores e os indicadores de vulnerabilidade para descobrir quais indicadores estão ligados à capacidade percebida dos agricultores de se adaptarem às mudanças climáticas, prestando atenção	Small coffee agroecosystems (hybrid)	Mixed; Qualitative and Quantitative	Primary data from questionnaires administered to farmers, secondary sources with vulnerability indicators, and stratified random sampling	(i) Poverty in the region, (ii) access to education, and (iii) economic dependence	Not reported. Only yes-or-no statements regarding possible changes and their impacts (perception of being able to adapt to climate change).	Reforestation, plantation renewal, soil conservation, crop diversification, water protection, transition to organic production, shade-grown coffee, and migration to higher altitudes (as a consequence of climate change, this increases farmers' perception of their adaptive capacity).
Title: Feedback modelling of the impacts of drought: A case study in coffee production systems in Viet Nam. / Authors: Yen Pham, Kathryn Reardon-Smith, Shahbaz Mushtaq, Ravinesh C. Deo . - Publication date: November, 2, 2020.	Vietnam	In this article, we apply causal loop modeling based on systems thinking theory to examine interdependencies and feedback processes among drought-related factors affecting agricultural production, using a case study of	Robusta coffee agroecosystems (conventional)	Qualitative	The data used in this study include primary data collected from semi-structured interviews and secondary data from the literature. The interviews were coded using the coding process of Kim and Andersen (2012).	Agricultural Production, Socioeconomic, Bioclimatic	Water deficit, deforestation, and population growth in the region; a warmer climate has been observed, with water scarcity and more severe droughts during the dry season, affecting irrigation. An increase in erratic rainfall distribution and in the number and intensity of drought periods has negatively affected	Irrigation, shading, and intercropping have been applied in several coffee plantations in the region to reduce risks associated with market fluctuations—especially when coffee prices fall—and changes in climatic conditions, including high temperatures and increased evapotranspiration. However, study participants highlighted barriers to the adoption of these practices, including limited capital
Title: Influence of livelihood assets, experienced shocks and perceived risks on smallholder coffee farming practices in Peru. / Authors: Rosalien E. Jezeer, Pita A. Verweija, René G.A. Bootb, Martin Jungingera Maria J. Santos. - Publication date: May, 7, 2019.	Peru	The objective of this study is to understand what drives smallholder farmers' decision-making in adopting different shade and input management practices in coffee systems. Based on previous research, shade and input management are key	Family coffee agroecosystems with coffee varieties tolerant and non-tolerant to coffee leaf rust (hybrid)	Mixed; Qualitative and Quantitative	Semi-structured interview and analysis of variance	The impact of shocks, seasonality, and trends on farmers' livelihoods, referred to as the vulnerability context; risk perception such as volatile coffee prices, incidence of pests and diseases; coffee bean quality; recent extreme climatic events; precipitation and temperature patterns;	Farmers perceived pests and diseases, coffee price volatility, and increasing temperatures as the main risks to their livelihoods, with different levels of shade adoption.	One-third of the farmers reported increasing shade levels, with climate change as the main driver. Farmers who reduced shade were motivated to do so due to pests and diseases. Some farmers reported increasing input use, while others reported no changes in input levels. Pest and disease pressure was the main factor driving increased input use, for both organic and chemical inputs.

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Title: Views from two mountains: exploring climate change impacts on traditional farming communities of Eastern Africa highlands through participatory scenarios. / Authors: Claudia Capitani, Weyessa Garedew, Amsalu Mitiku, Gezahegn Berecha, Binyam Tesfau Hailu, Janne Heiskanen, Pekka Hurskainen, Philip J. Platts	Kenya / Ethiopia	In this study, we apply a participatory scenario modeling framework (Capitani et al., 2016) to assess potential social responses to climate change impacts up to the mid-21st century. We also model resulting land-use and land-cover	Three altitudinal zones in the study area identified in relation to agroecological zones and the location of the main villages: low zone (below 1,200 m asl), mid zone (1,200–1,700 m asl), and mid-high zone (above 1,700 m asl) (agroecological).	Mixed; Qualitative and Quantitative	Meetings, workshop, landscape analysis workshop, modeling, and variance analysis	Social, Environmental, Agricultural, and Cultural	In both regions: increase in precipitation and temperature, variability in the seasonal regime	Strategies: integrated adaptation in agriculture and ecosystem services; food provision, water regulation, and climate regulation were identified as essential ecosystem services.
Title: The Impact of Fair Trade on Smallholders' Capacity to Adapt to Climate Change. / Authors: Stefan Borsky e Martina Spata. - Publication date: September, 12, 2017.	Latin America, Asia and Africa	The objective of this article is to evaluate the extent to which participation in Fair Trade can enhance farmers' adaptive capacity and make them more resilient to climate change.	Coffee agroecosystems (?)	Qualitative	Interviews	Social, Environmental, Adaptive Capacity, and the Impact of Participation in Fair Trade	They indicate an increase in temperature, rainfall outside the rainy season, an increase in droughts and floods, and in some cases hail. Reduced harvests, uneven ripening, moldy and delayed harvests. Increased pests and diseases such as fungi and leaf spot, reducing the photosynthetic area.	Participation in fair trade, income, and perception, which influence the demand for adaptation. Improved access to credit and savings institutions; greater market access; training in adaptation and mitigation measures; increased access to internationally funded climate adaptation programs; crop switching to species resistant to diseases and drought.
Title: Perception of climate change and farm level adaptation choices in central Kenya. / Authors: Kinfe Asayehegn, Ludovic Temple, Berta Sanchez and Ana Iglesias. - Publication: April, 2017.	Kenya	This study aims to bridge large-scale research and ethnographic approaches by examining the relationship between perception and adaptation, in order to explore the reasons behind farmers' choices.	Coffee agroecosystems (hybrid)	Mixed; Qualitative and Quantitative	Interviews, questionnaires, focus groups, group discussions, percentage, and variance.	Social, environmental, cultivation system and choices.	Variation among farmers in perceiving or not perceiving climate-related changes.	Rotation of food crop systems (commercial), adjustment of planting dates, and change of varieties.
Title: Climate change and its impacts: perception and adaptation in rural areas of Manizales, Colombia. / Authors: Mariana G. Barrucand, Carolina Giraldo Vieira, Pablo O. Canziani. - Publication date: May, 14, 2016.	Colombia	This study aims to assess climate variability and change and compare them with local populations' perceptions and the adaptation strategies used to cope with challenges in rural areas of one of the Andean ranges in Colombia	Different agroecosystems with three different locations and climates (agroecological)	Mixed; Qualitative and Quantitative	Questionnaires, statistical analysis (two-tailed Student's t-test), and analysis of secondary climate data	Social, climatic and cultural.	Temperature and precipitation changes, erosion and landslides, floods, and droughts were significant for the respondents. The use of cultural items, such as wool clothing, is becoming less common.	Reforestation and ground cover, alternative use of inputs to avoid insecticides that harm biodiversity, and requests for technical assistance in biodiversity management.

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Title: Exploring coffee farmers' awareness about climate change and Water needs: Smallholders' perceptions of adaptive capacity. / Authors: Sonia Quiroga, Cristina Sua´ rez a , Juan Diego Soli´s. - Publication date: October, 21, 2014.	Nicaragua	The objective is to analyze the extent to which farmers depend on water resources and whether this dependence influences their risk perception and expectations regarding public and private support for adaptation	Different coffee agroecosystems (?)	Mixed; Qualitative and Quantitative	Questionnaires, focus group, descriptive statistics, and variance.	Environmental and climatic.	Trust or lack of trust in policies and aid for climate change adaptation. "a. Being aware of water-related risks reduces the likelihood of perceiving high adaptive capacity in all scenarios."	Not reported, only the strength of willingness to adopt an adaptation or not.
Title: Perceptions of risk and adaptation: Coffee producers, market shocks, and extreme weather in Central America and Mexico. / Authors: Catherine M. Tucker a, Hallie Eakin, Edwin J. Castellanos . - Publicação: July, 5, 2009.	Central America / Mexico	The objective is to explore the role of risk perception in adaptation to stress through comparative case studies of coffee farmers' responses to climatic and non-climatic stressors.	Socio-ecological coffee agroecosystems (smallholder farmers) (hybrid)	Qualitative	Semi-structured interviews and archival research	Demography, agricultural production, crop prices, impacts and responses to the coffee crisis and climatic events, risk perception and local environmental conditions.	Extreme climate as a major concern, lack of rainfall, price fluctuations, diseases, and labor shortages.	Changes in land use, migration of agricultural activity, crop rotation and intercropping, reduction of chemical inputs.
Title: Perception and adaptation to climate change of the K'Ho peoplerelated to coffee production in Lâm Đồng province, Vietnam. / Authors: Nguyen Dinh Nghiepa, le Minh chiena, Nguyen Van hoangb , pham hong haia,Dao thi hieua, Nguyen thi thanh thuana, Do Van toana, le Quang	Vietnam	This study focuses on the perceptions of the K'Ho people regarding climate change and their adaptation strategies in coffee farming. Specifically, it addresses two main questions: (1) What are the perceptions of the K'Ho ethnic minority in Lâm	Agroecossistemas cafeeiros de alta tecnologia (Hibrido)	Mixed; Qualitative and Quantitative	Primary data from questionnaires and semi-structured interviews were used, and statistical analyses were conducted to describe farmers' perceptions.	Sociodemographic and environmental data regarding climate changes and perceptions.	Temperature, precipitation, soil moisture, wind strength, sunlight (ranging from little change to significant change, with most respondents perceiving substantial change).	Tecnicas ancestrais e outras; variedade resistentes, podas de galhos, plantio de mudas em grandes sacos de viveiros, usar cobertura morta, plantar arvores de sombra (abacate, manga, caqui, macadamia), plantar arvores quebra vento (banana, jaca, flor de cerejeira, bambu, abacate, plantio de cobertura de solo (capim limão, cabaça, abobora), gestão de pragas e doenças desde do uso de
Title: Unraveling farmers' interrelated adaptation and mitigation adoption decisions under perceived climate change risks. / Authors: María Rodríguez-Barillas, Marijn Poortvliet, Laurens Klerkx. - Publication date: June, 25, 2024.	Costa Rica	To investigate the interrelated nature of the adoption of Climate-Smart Agriculture (CSA) technologies related to soil fertility, soil conservation, agroforestry, agro-advisory applications, and alternative coffee farming practices. To	Coffee agroecosystems (?)	Mixed; Qualitative and Quantitative	Focus groups and multiple probability analysis	Education, sociodemography, CSA technologies and behavioral items, analyses of variances.	CSA technologies: soil fertility, soil conservation, agroforestry, agricultural advisory services, alternative agriculture (crop diversification, organic fertilizers, organic farming practices).	Adoption or non-adoption of CSA technologies: soil fertility, soil conservation, agroforestry, agricultural advisory services, alternative agriculture (crop diversification, organic fertilizers, organic farming practices).

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Title: PERCEPCIÓN DE PEQUEÑOS PRODUCTORES RESPECTO A LOS EFECTOSDEL CAMBIO CLIMÁTICO EN LA FLORACIÓN Y PLAGAS DE AGROECOSISTEMAS CAFETALEROS: UN ESTUDIO DE CASOT. / Authors: MartaEscarletBeristain-Moreno, AlejandraRamirez-Martinez,DavidSósol-Reyes*and	Mexico	To assess smallholder coffee farmers' perceptions of the relationship between flowering, pests, and climate change in Sabanas, Veracruz.	Coffee agroecosystems (agroecological)	Qualitative	Interviews using questionnaires with open-ended questions and observations in the agroecosystems	General information about the producer and crop data, presence of pests in the cultivation, perception of and problems caused by climate change.	Pests, drought, and delayed flowering caused by temperature changes; together, they affect the performance and quality of their product.	Not reported
Title: Are Vietnamese coffee farmers willing to pay for weather index insurance? / Authors: Le Lan, Shahbaz Mushtaq, Qingxia (Jenny) Wang, Angelica Barlis, Aline Deniau, Vivekananda Mittahalli Byrareddy, Huynh Tan Anh, Kees Swaans. - Publication date: December, 12, 2023.	Vietnam	The main objective of this phase is to explore market demand and raise awareness of Weather Index Insurance (WII), introducing its concept and how it works through a pilot phase for the local community.	Coffee agroecosystems participating in a sustainable management program and coffee farmers not participating (?)	Mixed; Qualitative and Quantitative	Interview using a semi-structured questionnaire and statistical models (binary logit regression)	Sociodemographic and agricultural characteristics of farmers, their perceptions and experiences with the impacts of climate change on their coffee production and their ability to manage the consequences of climate change, awareness of and exposure to	92% of respondents indicated that extreme climatic events have impacted their agricultural activities in the past five years. The impacts of drought on yield and income loss were perceived as the highest among all extreme climatic events. Drought was experienced by the majority of surveyed farmers (91%), followed by	Resilience or adaptation measures by farmers were not reported or investigated; however, adopting climate insurance emerges as a strategy mentioned in the study.
Title: Gendered adaptations to climate change in the Honduran coffee sector. / Authors: Hazel Velasco Palacios, Kathleen Sexsmith, Maite Matheu, Andrea Reiche Gonzalez. - Publication date: April, 10, 2023.	Honduras	Analyze and compare climate adaptation measures adopted both on-farm and off-farm by women and men smallholder coffee farmers, and assess how gendered access to agricultural assets and gender roles within coffee-producing	Small coffee agroecosystems (hybrid)	Qualitative	Interviews	Social, agricultural and environmental.	All participants (men and women) mentioned that they have noticed climate changes—mainly higher temperatures and longer dry seasons. They reported a decrease in production and grain quality; according to them, the prolonged dry season severely increased coffee flower loss and even caused damage to entire plantations, especially in	Agroforestry, new cultivars, variety replacement, crop diversification, and possible irrigation (both men and women adopt these measures, but men have greater ownership when reporting the benefits gained from implementing these strategies).
Title: Impact of climate variability, farmers adaptation and coping strategies on coffee production in highlands of Kigoma District, Tanzania. / Authors ZIZIMBAYUMSUYA, CHRISTOPHERPAULMAHONGE. - Publication date: June, 22, 2022.	Tanzania	This study aimed to investigate how climate change and variability have contributed to the low coffee production that farmers have been facing in the highland areas of Kigoma District, Tanzania.	Coffee agroecosystems (hybrid)	Mixed; Qualitative and Quantitative	Semi-structured questionnaires, both closed- and open-ended, were used to collect information from families. In addition, individual interviews were conducted to gather information from farmers within the target families. Production, climate change, and variability	Social, cultural, environmental and system management.	Perceptions differ among farmers, but all reported noticing some changes. Climate variability, decreasing precipitation, degradation of water sources, and deforestation were identified as the main factors driving climate change. The area has also been becoming warmer over the past 15 years, from September to	Only some have developed coping and adaptation measures to help them deal with the short- and long-term impacts of climate change and variability. Common practices included shifting to non-agricultural activities, engaging in temporary work, rainwater harvesting, mulching to reduce evaporation, receiving credit from coffee cooperative unions, planting hedges and shade trees to mitigate temperature increases

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Title: Coping with drought: Lessons learned from robusta coffee growers in Vietnam. / Authors: Vivekananda Byrareddy, Louis Kouadio, Shahbaz Mushtaq Jarrod Kath, Roger Stone. - Publication date: May 3, 2021.	Vietnam	The objectives of this study were to: (1) investigate coffee farmers' perceptions of and responses to drought; (2) assess the yield and financial impacts of drought and estimate the economic effect of drought mitigation strategies; and (3)	Coffee agroecosystems (hybrid)	Mixed; Qualitative and Quantitative	Structured questionnaires, demographics, archival materials, agricultural data, and econometric statistics	Questions about demography, cultivation system, perception of drought frequency and its impact on coffee plants, responses to drought events, and access to climate information and extension services.	Most respondents in Dak Lak (57%), Gia Lai (54%), and Lam Dong (64%) reported that drought occurs once every three years. In Dak Nong, 57% of respondents reported that its occurrence is biennial. Almost none of the participants experienced drought every year. Regarding the impact of drought on coffee	Irrigation, use of mulch
Title: Adaptation Measures to Climate Change in Coffee-Growing Organizations in the Central Region of Veracruz, Mexico	Mexico	To understand coffee farmers' perceptions of climate change and to identify adaptation measures to disruptions that help address the adverse effects of climate change and reduce their current and future vulnerability	Agroecological and conventional coffee agroecosystems (agroecological)	Qualitative	Semi-structured questionnaire	Sociodemography, climate change and adaptation measures.	Rising temperatures, sudden thermal changes, changes in and delays of precipitation.	Renovation of coffee plantations with pest- and disease-tolerant varieties; diversification of coffee plantations with polyculture (fruit trees, vegetables, staple grains, and others); modification of the agricultural calendar, mainly due to precipitation patterns; coffee shade management; soil and water conservation practices; and diversification of income sources.
Title: Impact of Climate Change on the Production of Coffea arabica at Mt. Kilimanjaro, Tanzania. / Authors: Sigrun Wagner, Laurence Jassogne, Elizabeth Price, Martin Jones e Richard Preziosi . - Publication date: January, 11, 2021.	Tanzania	The objectives of the study were: (1) to identify the extent of climate change and extreme weather events experienced by farmers on Mount Kilimanjaro over the past two decades; (2) to relate climate changes to ENSO and IOD extremes to determine potential	Commercial coffee agroecosystems with high diversity (hybrid)	Mixed; Qualitative and Quantitative	Historical climate data, focus group, descriptive statistics	Environmental and shade management.	Climatic differences depending on the region: some reported excessive rainfall, while other farmers experienced periods of drought; however, perceptions align with climatic data. Increases in temperature, frequently reported as the factor leading to reduced yields, make areas unsuitable for coffee production, pushing	Not reported
Title: Understanding the Perceptions of Sustainable Coffee Production: A Case Study of the K'Ho Ethnic Minority in a Small Village in Lâm Đồng Province, Vietnam / Authors: Quan Vu Le, Grace Jovanovic, Don-Thuan Le e Sanya Cowal. - Publication date: January, 31, 2020.	Vietnam	The objective of this case study is to examine sustainable coffee farming as a means to mitigate the increasing impacts of climate change on coffee production.	Coffee agroecosystems of an ethnic community in Vietnam (conventional)	Mixed; Qualitative and Quantitative	Coffee sustainability indicators, questionnaire, and statistics (T-test and principal component analysis)	Economic, social and environmental sustainability.	Lack of access to water, use of chemicals due to soil fertility and disease incidence, pesticide use, food insecurity and malnutrition, and high unemployment rates. During the rainy season, they are able to produce some food, but in the dry seasons this is not possible, exacerbating the community's food	Not reported

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Title: Smallholder Farmer Adoption of Climate-Related Adaptation Strategies: The Importance of Vulnerability Context, Livelihood Assets, and Climate Perceptions; / Authors: Shinbrot, KW Jones A. Rivera-Castañeda, W. López-Báez, DS Ojima. - Publication date: March, 5, 2019.	Mexico	The specific objectives of this study were: (1) to document the prevalence of adaptation strategies among smallholder ejido farmers; (2) to explore which vulnerabilities and livelihood assets were determining factors for the	Private and collective agroecosystems (agroecological)	Mixed; Qualitative and Quantitative	Interviews using semi-structured questionnaires, variable analyses, and accuracy tests	Demography; land leasing, quality and harvests; government income; resilience and climate change adaptation strategies; community and group participation; and wealth. To measure adaptive strategies, the following were examined: migration, storage, land use	Farmers strongly perceived the impacts of climate change: on a Likert scale from 1 to 5, households had an average score of 4. More than 80% of respondents experienced a disaster in the past 10 years; of these, 59% reported having suffered a hurricane, 10% reported earthquakes and landslides (each), 7% reported	In terms of individual adaptation strategies, farmers reported more frequent shade-grown coffee cultivation (82%), planting different crop varieties (75%), and changing sowing dates (70%) (Fig. 3). Other commonly implemented practices included building living fences (69%), reforestation (63%), and using soil conservation strategies such as cover crops (63%). Strategies such as constructing filtration dams to
Title: Use and perceptions of alternative economic activities among smallholder coffee farmers in Huehuetenango and El Quiché departments in Guatemala. / Authors: Andrew Gerlicz, V. Ernesto Méndez, David Conner, Daniel Baker & Dana Christel. - Publication date: October, 19, 2018.	Guatemala	In the following article, we attempt to elucidate coffee farmers' perceptions of specific diversification activities and how and why they perceive the benefits of these activities in relation to coffee production.	Coffee agroecosystems of family cooperatives (hybrid)	Qualitative	Interviews conducted through a workshop	Historical information on specific economic activities; details about the practices involved; yields and prices; contributions to livelihoods; comparisons with coffee; reasons for not specializing in coffee; reasons for not pursuing other economic alternatives; and plans and	Coffee leaf rust disease had a devastating impact on coffee production for the majority of our respondents. In some cases, the disease was so severe that the trees could not recover, requiring farmers to replant entire orchards. However, most were optimistic about production, believing it to be a temporary problem	Temporary coping strategies included reducing reliance on non-family labor, seeking temporary off-farm employment, expanding milpa production, and using savings or loans to cover livelihood expenses. Production diversification was also implemented.
Title: Percepciones de cambio climático y respuestas adaptativas de pequeños agricultores en dos paisajes guatemaltecos. / Authors: Bárbara Viguera, Francisco Alpízar, Celia A. Harvey, M. Ruth Martínez-Rodríguez, Milagro Saborío-Rodríguez, Lucía Contreras. - Publication date: July, 18, 2018	Guatemala	The objective of this study was to characterize two small-scale farming systems in Guatemala, document how smallholder farmers perceive the impacts of climate change, and identify the adaptation efforts undertaken	Agroecossistemas representativos de pequenos agricultores (Hibridos)	Qualitative	Secondary analysis from documents and geographic data, on-site visits, interviews with the property manager, and focus groups for validation.	Socioeconomic characteristics of household heads, households, and aspects of the production system, in addition to georeferenced and documentary data. Respondents were asked about their use of certain management practices (considered ecosystem-based	90% of respondents in Acatenango perceived changes in temperature and 86% in precipitation, while in Chiquimula 88% reported changes in temperature and 96% in precipitation. Among those who perceived climate changes, the perception of increased temperature was widespread, whereas the changes and trends	Although the vast majority of smallholders perceived changes in the climate of their region over the past ten years and reported impacts on their crops as a result, only a portion of producers implemented measures to adapt their production systems. In Acatenango, 51% of the surveyed producers made changes in farm management, attempting to adapt their crops to new climatic conditions, whereas in Chiquimula
Title: Climate change perceptions and adaptive responses of small-scale coffee farmers in Costa Rica. / Authors: Bárbara Viguera, Francisco Alpízar, Celia A. Harvey, M. Ruth Martínez-Rodríguez, Milagro Saborío-Rodríguez. - Publication date: May, 4, 2019.	Costa Rica	The objective of this study was to describe small-scale coffee systems in Costa Rica across two production areas and to present the efforts made by farmers to adapt to climate change.	Coffee agroecosystems with the following characteristics: study landscapes in Costa Rica with (i) predominance of small-scale agriculture, (ii) presence of coffee as the main crop, (iii) high vulnerability to climate change, and (iv) low adaptive capacity (conventional)	Qualitative	Structured research (questionnaires)	Socioeconomic characteristics and aspects of the production system, such as the presence of livestock, staple crops, and home gardens. To characterize coffee management, questions were asked about the use of a wide range of practices: weeding, use of agrochemicals	Ninety-eight percent of all surveyed producers reported having perceived a change in the local climate over the past ten years (between 2004 and 2014). In Turrialba, 96% observed changes related to temperature and 94% to precipitation, while in Los Santos, 96% and 93%, respectively, reported such changes. The perception of	The most frequent management changes in both landscapes in response to perceived changes were the incorporation of trees on the farm (50%), increased use of pesticides, herbicides, fungicides (24%) and fertilizers (15%), and the introduction of soil management and conservation practices (15%). The implementation of technological practices (such as the introduction of improved varieties, irrigation

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Title: Climate change impacts and adaptation among smallholder farmers in Central America. / Authors: Celia A. Harvey, Milagro SaborioÿRodriguez, M. Ruth MartinezÿRodriguez, Barbara Viguera, Adina ChainÿGuadarrama, Rafaele Vignola, e Francisco Alpizar. - Publication date: August, 14, 2018.	Central America	To examine whether farmers perceive climate changes, how they are being affected by climate change, if and how they are modifying their farming systems to cope with or adapt to the impacts of climate change, and what adaptation support	Small coffee agroecosystems (hybrid)	Mixed; Qualitative and Quantitative	Interviews, household visits, descriptive statistics, variance analysis, and mean calculations	Impacts, responses, and adaptation needs to climate change. Socioeconomic characteristics of farmers and their families, land use, farm management practices, farmers' perceptions of climate change, the impacts of climate change, and farmers' adaptation strategies	Ninety-five percent of all surveyed farmers reported having perceived changes in the local climate over the past decade. Among those who perceived that the climate was changing, 96.3% reported changes in temperature and 94.6% in precipitation. The most commonly reported change among farmers who perceived changes in	Fifty-eight point seven percent of coffee producers made changes in response to climate change, compared to only 35.5% of staple crop producers. On average, farmers who changed their management practices in response to climate change implemented an average of 1.5 (±0.12) adaptation practices. Smallholders implemented a variety of adaptation practices, including agroforestry and
Title: Climate variability and mitigation: perceptions and strategies adopted by traditional coffee growers in India. / Authors: P.G. Chengappa, C.M. Devika & C.S. Rudragouda. - Publication date: May, 2017.	India	The specific objectives of the study are: (a) to understand coffee farmers' perceptions of climate variability affecting their production, and (b) to understand the causality between these perceptions and the actions undertaken by	Coffee agroecosystems in a production region of India, Kodagu (conventional)	Mixed; Qualitative and Quantitative	Descriptive statistics were used to provide Likert scale responses, questionnaire data, and meteorological data.	Socioeconomic characteristics of coffee farmers, their perceptions of climate variability, the associated risks, and the corroboration of these perceptions with factual production and meteorological data.	Arabica producers perceived a decrease in productivity, while 60% of Robusta producers perceived an increase in yields over the past 10 years. Seventy percent of coffee producers in Kodagu rated climate variability as a high-risk factor in production, followed by the unavailability of skilled labor (55%). Pests and	Soil and water conservation will mitigate variations in precipitation and temperature to a large extent. However, interestingly, 66.07% of producers did not see an urgent need to change their cultivation practices, even though they perceived climate variability as an imminent threat to long-term coffee production. (Suggested strategies: switching from Arabica to Robusta / water management / coffee shade
Title: Adaptation in a multi-stressor environment: perceptions and responses to climatic and economic risks by coffee growers in Mesoamerica. / Authors: Hallie Eakin; Catherine M. Tucker; Edwin Castellanos; Rafael DiazPorras; Juan F. Barrera; Helda Morales. - Publication date: July, 5, 2013.	Mesoamerica	To assess farmers' perceptions of climate risk and variability in relation to other stressors, and to gain insights into the autonomous adaptation-by-proxy process: through an evaluation of how farmers explain their choices regarding distinct stressors	Smallholder coffee agroecosystems (hybrid)	Mixed; Qualitative and Quantitative	Case studies, questionnaires, household visits, and descriptive statistics	Sociodemograficas e ambiental	Forty to sixty-six percent of surveyed households reported being affected by drought conditions over the past 10 years, and 53% of households cited impacts from heavy rainfall (with particularly high frequencies in the two sites in Costa Rica, Concepción del Sur in Honduras, and Cacahoatán in Mexico). These two climate-related	By far, the most common responses among households that reported drought impacts were "do nothing" or "there is nothing we can do." A small percentage (21%), however, reported investing in improved shade management as a protective measure against drought. Soil conservation was by far the most frequently reported change in strategy. In Nicoya, almost all farmers reported having reduced
Title: Socioeconomic and Environmental Basis for the Development of Small Scale Forestry in a Highly Degraded Watershed in the Venezuelan Andes. / Authors: Armando Torres-Lezama; Emilio Vilanova; Hirma Ramı´rez-Angulo; Giancarlo Alciaturi. - Publication date: November, 11, 2011.	Venezuela	The objective is to examine the conditions and sources that allow for a general characterization of the study site and the municipality of Antonio Pinto Salinas.	Agricultural systems focused on coffee in the Chama River Basin and the Lake Maracaibo influence zone (conventional)	Mixed; Qualitative and Quantitative	Analyses of primary and secondary data, field observation, and literature review. Soil loss (erosion) was also considered an indicator to estimate the current status of the surveyed farms.	. Elementos gerais de distribuição populacional, emprego e pobreza foram obtidos, enquanto fatores ecológicos potencialmente tendo um impacto direto na estabilidade da terra e produtividade também foram examinados.	Severe soil loss was detected in 45% (not reported), and nearly 38% of the surveyed farms contained, among a diverse range of vegetation types, small remnants of cloud forest. A small proportion of landowners (27%) indicated the occasional use of small-scale logging for timber products. Around 40% of local	Around 37% of local residents were able to provide some ideas about potential practices related to more sustainable management of coffee production and the watershed as a whole. Reforestation was the most commonly proposed recommendation; the inclusion of tree cover in coffee-growing areas (using a variety of methods) was considered a solid alternative to reduce natural degradation

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Title: Percepciones y formas de adaptación a riesgos sociambientales en el páramo de Sonsón, Colombia. / Authors: Juan Camilo de los Ríos C. Jalcione Almeida. - Publication date: December, 30 2010.	Colombia	The objective is to examine the conditions and sources that allow for a general characterization of the study site and the municipality of Antonio Pinto Salinas.	Coffee farmers, extractivists, and diversified producers (agroecological)	Qualitative	Semi-structured interviews	Social, ambiental e gestão	Forced displacement more severely affected rural communities in the municipalities of Argelia and Nariño, in the Magdalena River basin, where all interviewed farmers reported having had some type of related experience; some even stated that they had left the region for several years and later returned to their	Other forms of local adaptation to risks related to lack of financial resources include strategic alliances between farmers and agricultural input suppliers. According to farmers, in these partnerships, suppliers provide inputs to the farmer, who later pays for them with the profit from the sale of products. Other alliances identified by farmers, especially in diversified agricultural systems, occur when