1. 10–15 meters per year.
2. Flooding followed by diminished water flow for drinking and agriculture.
3. 0.5°C.
4. 2-4°C
5. Fewer rainy days but more extreme rainfall events
6. Fine precipitation (drizzle-type).
7. Higher levels of tropospheric ozone pollution.
8. Intensification with a possible shift in timing.
9. Adverse effects on both irrigated and non-irrigated agriculture.
10. Suppress rainfall, leading to drier conditions and more dust.
11. One of the most significant countries in the world.
12. Level rise, changes in the monsoon, severe storms, flooding, drought, and water stress.
13. 17.5 percent.
14. It is referred to as "Indian agriculture gambles with monsoon."
15. The extended family.
16. Highly diverse, ranging from subfreezing Himalayan winters to tropical climates
17. Modernist, democratic, and technical development vs. persistent poverty and subsistence agriculture.
18. Emphasis on education, health services, and equality.
19. Technology, centered in Bangalore, and participatory local governance.
20. Poverty, malnutrition, illiteracy, and inequality.
21. Reactive rather than proactive, focused largely on the energy sector.
22. Significant progress through energy efficiency improvements and environmentally friendly energy development.
23. Key role, focusing on per capita emissions and cumulative emissions as indicators for developed countries to undertake mitigation first.
24. Actively participating in UNFCCC mechanisms like CDM and REDD.
25. Should be financed by developed nations leading by reducing their own emissions and engaging in clean technology transfer.
26. Earlier snowmelt, changes in monsoons, and increased drought.
27. Winter, summer, southwest monsoon, and northeast monsoon.
28. Tamil Nadu, Karnataka, and Kerala.
29. Provides almost 80 percent of the annual rainfall.
30. Linked to the El Niño/Southern Oscillation (ENSO) cycle.
31. It provides almost 80 percent of the annual rainfall, influencing optimal planting dates.
32. It brings most of their rainfall during November and December.
33. There is a tendency for less rainfall in El Niño years and above-normal rainfall in La Niña years.
34. It helps in planning for optimal planting and managing tropical storms.
35. Strong Hindu traditions coexist with and are challenged by other religions like Islam, Christianity, and Sikhism.
36. It knits the society together and emphasizes interdependence.
37. It plays a crucial role in emphasizing interdependence and supporting individuals and families.
38. It is characteristic, ranging from subfreezing Himalayan winters to tropical climates.
39. It determines optimal planting dates, impacting the success of crops.
40. It divides the year into winter, summer, southwest monsoon, and northeast monsoon based on temperature and precipitation.
41. Modernist, democratic, and technical development vs. persistent poverty, subsistence agriculture, and caste-based discrimination.
42. It centers around technology, particularly in Bangalore, and historically emphasizes participatory local governance.
43. It prioritizes consumption over investment, services over industry, and high-tech over low-skilled manufacturing.
44. It intensified modernist, democratic, and technical development, but persistent poverty and caste-based discrimination remain.
45. It actively participates in UNFCCC mechanisms, promoting environmentally friendly energy development.
46. It urges developed countries to undertake mitigation first, emphasizing their higher per capita and cumulative emissions.
47. Developed nations should lead by reducing their own emissions and engaging in clean technology transfer.
48. It sets back general socio-economic development by causing destruction of crops, property, and infrastructure.
49. It has a large and growing population, increasing greenhouse gas emissions, and severe potential climate impacts.
50. It is mirrored in religious, cultural, economic, and geographical differences across the country.
51. Widespread changes include shifts in precipitation, ocean salinity, wind patterns, and extreme weather events.
52. It is shown to be warmer than any time in the past.
53. This reversal coincides with increased monsoon winds over the western Arabian Sea, possibly linked to higher summer heating over the Tibetan Plateau.
54. There is a substantial upward trend in intensity, longer storm duration, and a correlation with tropical sea surface temperature.
55. The distributions of global minimum and maximum temperatures have shifted to higher values, consistent with overall warming.
56. Cold extremes have warmed more than warm extremes over the past 50 years.
57. There is an observed increase in heavy precipitation events, even in regions where mean precipitation amounts are not increasing.
58. Global models suggest upper-ocean warming in the South Indian Ocean is attributed to a reduction in the strength of southeast trade winds.
59. Atmospheric circulation patterns, including El Niño, the North Atlantic Oscillation (NAO), and other variability patterns, play a significant role.
60. Dry land areas have more than doubled in area since the 1970s due to precipitation decreases related to ENSO and subsequent increases from surface warming.
61. It provides information about local and regional climate changes with higher resolution.
62. Dynamical downscaling (using regional climate models) and statistical downscaling (empirical or statistical-empirical downscaling).
63. Projections show widespread warming, particularly pronounced during winter and post-monsoon months.
64. Increased precipitation is projected, especially over the northwestern parts of India, currently a dry region.
65. The IOD, occurring periodically, leads to differences in regional rates of surface-ocean warming that affect atmospheric circulation and land surface warming.
66. Soil moisture plays a crucial role in determining the magnitude and patterns of projected rainfall changes.
67. They may cause changes in the monsoon circulation and reduce summer monsoon precipitation in certain regions.
68. The net effect is an increase in monsoon rainfall associated with a warming climate.
69. They are unable to include small-scale spatial geographical features and distortions of albedo feedbacks.
70. An average temperature increase of around 0.5°C is expected, with maximum increases in northern India, and precipitation changes, especially over northwestern parts of India.
71. There is a substantial sensitivity in models to these choices, affecting the projection of regional climate changes.
72. They suggest increases in all three aspects as a result of climate change.
73. Projections indicate an average temperature increase of around 0.5°C, with more significant increases in northern India.
74. Increased precipitation is projected, particularly over the northwestern parts of India, a region that is currently dry.
75. Maximum temperature increases could be on the order of 2-4°C, with a potential maximum increase of 4°C in the northern region.
76. Longer time scales for system-wide changes in atmosphere-ocean interactions are expected, resulting in a delay in the increase in monsoon rainfall.
77. Projections indicate a potential temperature increase of 2-4°C, with maximum increases in the northern region.
78. Longer time scales for system-wide changes in atmosphere-ocean interactions are expected, causing a delay in increased monsoon rainfall.
79. Most models predict general warming and enhanced rainfall, especially during the monsoon season.
80. Increased precipitation is projected, particularly.
81. Numerous long-term changes, including shifts in precipitation, ocean salinity, and extreme weather, have been observed.
82. It is shown to be warmer than any time in the past.
83. It has reversed its millennia-long trend toward less rainfall, possibly due to increased summer heating around the Tibetan Plateau.
84. Estimates show a substantial upward trend in tropical storm destructiveness, correlated with increasing sea surface temperatures.
85. They suggest an increased frequency of heat waves, but cold extremes have warmed more than warm extremes in the past 50 years.
86. There is an observed increase in heavy precipitation events, even in places where mean precipitation amounts are not increasing.
87. Upper-ocean warming in the South Indian Ocean is attributed to a reduction in the strength of southeast trade winds.
88. Dynamical downscaling (using regional climate models) and statistical downscaling (empirical or statistical-empirical downscaling).
89. All models show positive trends of widespread warming, particularly during winter and post-monsoon months.
90. They are unable to include small-scale spatial geographical features and distortions of albedo feedbacks.
91. They may cause changes in the monsoon circulation and reduce summer monsoon precipitation in parts of South and East Asia.
92. The net effect is an increase in monsoon rainfall associated with a warming climate.
93. An average temperature increase of around 0.5°C is expected, with maximum increases in northern India, and precipitation changes, especially over northwestern parts of India.
94. There is a substantial sensitivity in models to these choices, affecting the projection of regional climate changes.
95. They suggest increases in all three aspects as a result of climate change.
96. Increased precipitation is projected, especially over the northwestern parts of India, a region that is currently dry.
97. Maximum temperature increases could be on the order of 2-4°C, with a potential maximum increase of 4°C in the northern region.
98. Longer time scales for system-wide changes in atmosphere-ocean interactions are expected, resulting in a delay in the increase in monsoon rainfall.
99. Projections indicate a potential temperature increase of 2-4°C, with maximum increases in the northern region.
100. Longer time scales for system-wide changes in atmosphere-ocean interactions are expected, causing a delay in increased monsoon rainfall.
101. Most models predict general warming and enhanced rainfall, especially during the monsoon season.
102. Latent heat release from monsoon rainfall.
103. Monsoons play a vital role by driving atmospheric circulations and influencing the global hydrological cycle.
104. Most global models suggest that Indian monsoons will intensify with a warming climate.
105. The continental-scale land-sea thermal contrast drives monsoon circulations.
106. The Indian monsoon includes East Asian and South Asian (Indian) monsoon systems.
107. Irregularity depends on feedback from the ocean, especially at intra-seasonal and interannual scales.
108. They are long-lasting weather patterns evolving over weeks to months, influencing intra-seasonal variability.
109. While ENSO and monsoon variation show high correlation at times, there are decades with little or no apparent association.
110. ENSO affects the position and strength of the subtropical high in the North Pacific, impacting typhoons and heavy rainfall.
111. Aerosols, by changing local heating, can influence monsoon evolution and circulation patterns.
112. It could act as an elevated heat pump, strengthening the Asian summer monsoon circulation.
113. Satellite measurements show the largest sea level rise in the western Pacific and eastern Indian Oceans, impacting the east coast.
114. Changes in heat and salinity distribution in the ocean lead to regional variations in sea level rise patterns.
115. Agricultural regions depend on spring snowmelt, and earlier melting could reduce soil moisture during the growing season.
116. Glacial melt provides water during the dry season, supporting river flows and irrigation for crops.
117. Increased sulfate deposition, linked to sulfur dioxide emissions, may impact the hydrological cycle and river flows.
118. Aerosols could trigger or modulate a rapidly varying or unstable Asian winter monsoon circulation.
119. Several factors combine to produce extreme events, and instrumental records have limited historical data.
120. Expanded storm formation areas due to higher sea surface temperatures could lead to more hurricanes and typhoons.
121. Heat waves are projected to be more intense, longer-lasting, and more frequent in a future climate.
122. A significant annual mean warming of 0.68°C per hundred years, with variations in different seasons.
123. Maximum daytime temperatures exhibit more trend than minimum nighttime temperatures, contrary to general expectations.
124. Water supply is changing due to glacier retreat, impacting major rivers and affecting regions dependent on spring snowmelt.
125. Droughts led to water table decline, crop failures, and mass starvation in affected regions.
126. Conflicts arise from decisions like releasing dam water for electricity but not for irrigation during droughts.
127. Climate variability contributes to health issues, with heat waves and floods causing deaths and increased diarrheal diseases.
128. A rising trend of about 1 cm per decade, contributing to stronger wind and flood damage in coastal regions.
129. Forest types and ecosystems may shift, impacting biodiversity, productivity, and economically important forest types.
130. Projected temperature increases may lead to significant shifts in forest types, affecting biodiversity and productivity.
131. Socioeconomic pressures are worsening conditions, leading to reduced biodiversity and changes in forest composition.
132. The IOD affects the monsoon by influencing sea surface temperatures and atmospheric circulations.
133. Extratropical cyclones, especially those energized near the Tibetan Plateau, strengthen monsoonal circulations in East Asia.
134. Intensity, size, and duration have more significant impacts, influencing the severity of tropical storms on affected regions.
135. IOD influences teleconnections, affecting weather patterns in distant regions and contributing to climatic variability.
136. SAM is associated with temperature variations, sea-surface temperatures, and sea-ice distribution around Antarctica.
137. Aerosol loading influences the monsoon by changing local heating of the atmosphere and land surface.
138. Reduced shortwave radiation affects the thermal contrast, potentially impacting the Asian monsoon circulation.
139. Absorbing aerosols may mask up to 50 percent of surface warming in South Asia by influencing radiation absorption.
140. The Indian sub-continent is a significant source of human-generated aerosols, making it vital for climate studies.
141. Global estimates show a substantial upward trend in hurricane destructiveness, strongly correlated with tropical SSTs.
142. Changes in tropical storm and hurricane frequency and intensity are masked by natural variability, leading to debates.
143. Improved models with convection constraints simulate rainfall extremes well but may overestimate heavy rainfall events in central India.
144. The increase in hurricanes, especially in categories four and five, is a notable trend since 1970, influenced by SSTs.
145. Aerosols, by suppressing rainfall, induce drier conditions, affecting hydrological cycles and agricultural production.
146. The variability in the Indian climate shapes the PDF of extreme events, making it challenging to attribute them to specific causes.
147. Future climate projections suggest increased temperature extremes, leading to more intense and frequent heat waves.
148. Surface air temperatures in India showed a significant annual mean warming of 0.68°C per hundred years during the period.
149. Consecutive droughts can lead to a decline in water tables, crop failures, and significant impacts on agricultural regions.
150. Water management decisions favoring electricity over irrigation during droughts can lead to conflicts, prompting such responses.
151. Climate variability, manifested as heat waves and flooding, contributes to health issues, causing deaths and increased diarrheal diseases.
152. Anthropogenic activities, mainly the burning of fossil fuels.
153. Evidenced by increases in global average air and ocean temperatures, melting of snow and ice, and rising sea levels.
154. A large population depends on climate-sensitive sectors like agriculture, forestry, and fishery for livelihood.
155. Adverse effects include a decline in rainfall, rising temperatures, and increased severity of livelihood issues.
156. Rapid industrialization, urbanization, and economic development.
157. Implications for food production, natural ecosystems, freshwater supply, and public health.
158. A warming of 0.1°C per decade, with most of it attributable to human activities.
159. Between 1.4°C and 5.8°C.
160. Tropical areas are more vulnerable, and India is a developing country with climate-sensitive sectors.
161. The UN Conference on Environment and Development (UNCED) at Rio de Janeiro.
162. It is criticized for not initiating sufficient global emission reduction and lacking promised further cuts.
163. Projected to rise to 368 million, facing severe water and sanitation stress.
164. Forecasted to be under severe stress by 2020, with demand projected to outstrip supply by 2050.
165. It can lead to permanent changes, including sea level rise and adverse impacts on cropping patterns and agriculture.
166. Adverse impacts, including threats to agriculture, rise in sea level, and increased frequency of extreme events.
167. Its almost exclusive focus on mitigation goes against the interests of developing nations.
168. Unsustainable consumption patterns of rich industrialized nations, emitting more than 70% of total global CO2 emissions.
169. The industrial process sector shows the maximum growth, followed by the waste sector, with almost no increase from agriculture.
170. Growth in cement and steel production in India over the decade has led to increased emissions.
171. 4.2% per annum.
172. 65%, according to the provided content.
173. Nearly 25%, as per the GOI (2002) report.
174. Studies predict a considerable decline due to changing climate conditions, such as a rise in winter temperature.
175. It could reduce the yield by 0.45 ton per hectare, as estimated in the provided content.
176. By 20%, according to a World Bank report.
177. Yields may fall dramatically by 25-30%.
178. Flooding is expected to rise dramatically, causing a potential 12% drop in rice yields in some districts.
179. Flood risks would increase, and in the long term, there would be no replacement for water from glaciers.
180. With a 2 to 3.5°C temperature rise, net revenue could fall between 9% and 25%.
181. It could lead to a nearly 25% fall in farm-level net revenue.
182. Land is a fixed resource for agriculture, and the demand for food is expected to increase.
183. Even with farm-level adaptations, significant impacts remain, with up to a 25% fall in net revenue.
184. Mall et al. (2006) provide evidence of significant yield drops for these crops.
185. Farmers' understanding of climate change varies, with higher impacts reported in the mid-1980s to late 1990s.
186. An intensification of the global hydrological cycle affecting both ground and surface water supply.
187. Droughts and floods may worsen in different parts of the country under greenhouse gas scenarios.
188. River basins of Kutch, Saurashtra, Mahi, Pennar, Sabarmati, and Tapi.
189. Lower rainfall and increased evaporation could lead to less runoff, changing freshwater availability.
190. It is expected to decline by 14% by the year 2050.
191. They could decay at extremely rapid rates, shrinking from 5,00,000 km2 to 1,00,000 km2 by the 2030s.
192. Climate change will sharply reduce the effectiveness of planned hydropower investments.
193. The impacts include changes in runoff, declining soil moisture, and increased aridity in hydrological zones.
194. Climate change is expected to reduce the overall quantity of available runoff.
195. Gosain et al. (2006) use it to determine spatial-temporal water availability, showing potential deterioration in droughts and floods.
196. They determine the number of sub-basins and areas facing water scarcity or surplus.
197. Acute water scarcity conditions are predicted in the west-flowing rivers of Kutch and Saurashtra.
198. River basins belonging to Cauvery, Ganga, Narmada, and Krishna.
199. Future climate change is likely to have a significant impact, causing irreversible damage and biodiversity loss.
200. They require the longest response time to adapt and have a long gestation period for developing adaptation strategies.
201. About 20%, as per the State Forest Report (2001).
202. Nearly 200,000 villages are classified as forest villages, indicating significant dependence on forest resources.
203. Categories include 'Miscellaneous forest,' Shorea robusta or sal, and Tecton grandis or teak.
204. 3 to 5 degrees Celsius.
205. By 20%, except for Tamil Nadu, Punjab, and Rajasthan.
206. It jeopardizes access to clean water, food, and healthcare.
207. 330 million people and $100 billion in damage.
208. Uneven distribution and insufficiency for transdisciplinary integration.
209. Increased exposure to heat, poor air quality, and changes in disease transmission.
210. By 2–4.8 degrees Celsius.
211. An increase of about one hundred millimeters.
212. India overall, with 2016 being the hottest year since records began in 1901.
213. By 0.22 degrees Celsius each decade.
214. A third of the country is affected, primarily due to monsoon unpredictability.
215. They can influence the flow and water availability of the Indus, Ganges, and Brahmaputra rivers.
216. 33%, with an increase from the current 23%.
217. The National Action Plan on Climate Change (NAPCC), unveiled in 2008.
218. Changes in precipitation will affect hydrological system design, flood and drought management, and urban planning.
219. A 20% reduction in water usage.
220. It disregards their objectives for evaluation and growth.
221. Development that meets current needs without jeopardizing future generations' ability to meet their needs.
222. It now encompasses economic, social, and environmental concerns.
223. Due to current unsustainable practices with resources like water, soil, jungles, land, wildlife, and groundwater.
224. A combination of economic growth, social equality, and environmental preservation is necessary for sustainable development.
225. Policymakers often perceive them as a trade-off but evidence suggests environmental conservation is an obligation.
226. It has made discussions more sustainable since its adoption in the 1992 "United Nations Conference on Environment and Development (UNCED)."
227. These areas are projected to be the driest and are expected to face uneven water resources.
228. By 30% and 50%, respectively, based on CMIP5 GCMs.
229. Climate change threatens to exacerbate existing gender-based health inequities.
230. About 20%.
231. It is used to model climate scenarios for India under the IPCC A2 and B2 scenarios.
232. Nighttime temperatures are predicted to rise faster than daytime temperatures.
233. Severe weather conditions have led to a variety of impacts, including droughts affecting millions of people.
234. Because it varies considerably throughout India's regions and river basins.
235. It jeopardizes access to clean water, food, and healthcare in the coming century.
236. $100 billion.
237. It is projected to increase by 20%.
238. 33%, with an increase from the current 23%.
239. Implementation of energy-efficient technology, shifting to renewables, forest preservation, and efficient public transportation.
240. By reducing greenhouse gas emissions in power generation, transmission, and distribution.
241. It improves energy supplies while lowering pollution levels in the surrounding areas.
242. Biodiversity conservation, shoreline protection, local employment, enhanced forest dweller incomes, and carbon sink enhancement.
243. They help minimize traffic congestion, pollution, and greenhouse gas emissions.
244. It can reduce greenhouse gas emissions or increase carbon sinks in the long term.
245. It creates fair competition for renewables, accelerates adoption, and ensures economic sustainability for utility companies, leading to a reduction in carbon emissions.
246. According to the IPCC's "Third Assessment Report (TAR)," sustainable growth methods are crucial for climate change management.
247. According to the most current state review, these factors are all interconnected with climate change.
248. The atmosphere, sea, land, plantation, and fossil fuel deposits.
249. Growing levels of atmospheric carbon dioxide, primarily from the usage of fossil fuels and other human activities.
250. 39,000 GtC in oceans, 16,000 GtC in fossil fuels, 2500 GtC in soils and vegetation, and 760 GtC in the atmosphere.
251. Usage of fossil fuels and other human activities, with burning fossil fuels generating 6.3 GtC per year between 1990 and 1999.
252. It is a way to slow down global warming and sea-level rise by cutting emissions from historical, current, and future sources.
253. Human security, which has two fundamental dimensions according to the UNDP definition.
254. It depends on the proportionate dependence on natural ecological systems, their vulnerability to climate change, and human responses.
255. Governmental actions, globalization, environmental degradation, and terrorism, among others.
256. Through factors such as loss of livelihoods due to environmental change, fragile states, and migration.
257. It helps understand the complexities involved in addressing environmental challenges and promoting human security.
258. It can lead to the adoption of sustainable practices in various areas before implementing sustainable practices.
259. Population increase, technological improvement, contemporary lifestyle, and the industrial revolution contribute to environmental issues.
260. It leads to a thorough understanding of the benefits and risks of sustainability, promoting responsible behavior.
261. It can have an enormous impact, particularly in the poorest countries.
262. It leads to increased evapotranspiration, groundwater depletion, water salinity, habitat loss, and impacts on agricultural practices, human health, and population mobility.
263. It is vital for lowering environmental pollution, enhancing efficiency, and cutting energy prices in the energy business.
264. They refuse when growth results in banishment and adversely impacts health and livelihood due to hydropower plants.
265. The rise in temperatures due to anthropogenic greenhouse gases may drastically change sericulture practices, with varying effects in different regions.
266. The precise impact is unknown, but climate change theories suggest varying effects on soil health and the sericulture sector.
267. It results in rising temperatures, harsh weather occurrences, and dwindling water supplies for agricultural operations.
268. They are crucial since climate change directly impacts agriculture and exacerbates socioeconomic gaps, particularly in the context of tropical monsoon failure.
269. With over a billion people, India is crucial, and more advantages can be realized in less socio-economically developed areas.
270. Climate change, with the increase in concentrations of greenhouse gases being primarily responsible.