



UNDP Insurance  
and Risk Finance  
Facility

**IsDB**   
البنك الإسلامي للتنمية  
Islamic Development Bank

**المعهد  
ISDBI**  
معهد البنك الإسلامي للتنمية  
Islamic Development Bank Institute



# INSURING A SUSTAINABLE FUTURE

Building Climate Resilience Through Takaful

Part 1: Key Findings and Recommendations

## About this paper

This publication marks the initial release in a collaborative series being produced by the United Nations Development Programme (UNDP), the Islamic Development Bank (IsDB), and the Islamic Development Bank Institute (IsDBI) focused on leveraging Takaful for mitigating climate risks. Other pieces of this series are planned to be released in 2024. Convening for this effort has been provided by UNDP's Insurance and Risk Finance Facility (IRFF).



### United Nations Development Programme (UNDP)

UNDP is the leading United Nations organisation fighting to end the injustice of poverty, inequality, and climate change. Working with our broad network of experts and partners in 170 countries, we help nations build integrated, lasting solutions for people and the planet. Learn more at [undp.org](https://undp.org) or follow at @UNDP.



### UNDP Sustainable Finance Hub

SDG financing is one of the four elements of UNDP's SDG integrator role, and it is a cross-cutting enabler for the success of all UNDP's thematic areas of work. UNDP, having a long track record of working in public finance and private sector development, through the [Sustainable Finance Hub](#), in collaboration with partners, supports governments, the private sector, civil society and philanthropy to mobilise and align public and private flows of finance with the SDGs and national priorities across different development contexts, including fragile and conflict-affected countries and Small Island Developing States.



### UNDP Insurance and Risk Finance Facility

The [Insurance and Risk Finance Facility](#) (IRFF) is part of the Sustainable Finance Hub (SFH) of the United Nations Development Programme (UNDP), and it is a flagship initiative dedicated to insurance and risk finance. The IRFF manages UNDP's global representation in the insurance space. It is a one-stop shop for innovative solutions for UNDP Country Offices, programme countries and partners. This includes insurance and risk finance issues, networking, partner development, policy and guidelines, technical and implementation, capacity and assistance, and financing opportunities. More information available at [irff.undp.org](https://irff.undp.org)



## Islamic Development Bank

The Islamic Development Bank (IsDB) is a multilateral development bank (MDB) working to improve the social and economic development of its member countries and Muslim communities around the world to deliver impact at scale. IsDB supports its member countries in meeting their climate and sustainable development goals and targets through economic and social infrastructure investments, institutional strengthening, capacity building, partnership, and leveraging resource-mobilisation capabilities with other private, national, bilateral, and multilateral development partners. IsDB is the world's largest public Islamic finance institution and the largest south-south MDB.



## Islamic Development Bank Institute

The Islamic Development Bank Institute is the knowledge beacon of the Islamic Development Bank Group. Guided by Islamic economics and finance principles, the Islamic Development Bank Institute is mandated to lead the development of innovative knowledge-based solutions to support the sustainable economic advancement of IsDB Member Countries and various Muslim communities worldwide. The Institute enables economic development through pioneering research and original economic analysis, human capital development, knowledge creation, dissemination and management. The Institute leads initiatives to enable Islamic finance ecosystems, ultimately helping Member Countries achieve their development objectives.

## Acknowledgements

**Author** - Muhammad Ali Khan

**Project technical team** - Jan Kellett, Faraz Uddin Amjad, Bradley Todd Hiller, Syed Faiq Najeeb

**Peer reviewers** - Lauren Carter, Miguel Solana, Abdurrahman Yazici, Charles Selestine, Aboubacar Salihou Kante, Salih Suwarelzahab, Peter Casey

**Project Management** - Loïc Martel

## Disclaimer

This paper presents solutions and opportunities for securing against climate risks using Takaful mechanisms. The views expressed in this paper are those of the authors and do not necessarily represent those of the United Nations, including the United Nations Development Programme (UNDP), the Member States of the United Nations, or the Islamic Development Bank (IsDB) Group. Furthermore, the designations employed herein, their completeness and presentation of information are the sole responsibility of the author and do not necessarily reflect the opinion of the organisations mentioned above. For all other inquiries, please get in touch with Jan Kellett ([jan.kellett@undp.org](mailto:jan.kellett@undp.org)), Bradley Todd Hiller ([bthiller@isdb.org](mailto:bthiller@isdb.org)) or Syed Faiq Najeeb ([snajeeb@isdb.org](mailto:snajeeb@isdb.org)).

# Table of Contents

Executive Summary - Building Climate Resilience Through Takaful.....	5
<b>Chapter 1: Introduction.....</b>	<b>7</b>
Table 1: The Influence of climate change on various economic sectors.....	9
<b>Chapter 2: Growing climate risks and limited resilience .....</b>	<b>10</b>
Table 2: Major climate risks in countries with sizeable Muslim populations.....	12
Table 3: Effects of disasters on nations in the OIC over the last 50 years.....	1
Table 4: Population ranking and use of insurance in countries with sizeable Muslim populations.....	13
<b>Chapter 3: Challenges to conventional insurance adoption .....</b>	<b>14</b>
Figure 1: Introduction to Takaful and its key features .....	15
<b>Chapter 4: Takaful emerging as a potential solution.....</b>	<b>17</b>
Table 5: A selection of OIC-member countries showing relationship between .....	
Takaful's market share and insurance penetration.....	18
Figure 2: Case examples .....	19
Figure 3: Takaful's alignment with the SDGs and climate agenda .....	21
Figure 4: Potential advantages and challenges for Takaful to Build Climate Resilience .....	22
<b>Chapter 5: High-level recommendations .....</b>	<b>23</b>

# Executive Summary - Building Climate Resilience Through Takaful

## Rising Climate Risks

Rising sea levels to push **100 million** more people into poverty by 2030



**435** disaster events in 2022, **7.5%** higher than the 20 year average

**↓ 11%** Lowered annual global food production due to climate risks



**13 out of 27** countries most threatened by climate change have Muslim-majority populations facing risks



## Limited Resilience



CLIMATE RISKS EXPECTED TO:

Reduce global GDP by **10%** annually by 2050

Displace **216 million** people in developing countries

Insurance coverage **below 1%** in **10** largest countries with sizeable Muslim populations



**200 disasters** in OIC countries 2021-2022, **\$23 billion** losses, **300 million** insured

## Islamic Finance and Takaful

Islamic finance assets in 2022 reached **\$3.25 trillion**



## Takaful Opportunities

Traditional insurance underwrites more in a single year eg. AXA, **\$109.3 billion** in 2022



**11.61%** Takaful market growth rate, projected to reach **\$72 billion** premium volume by 2030

Takaful represents **1%** of total Islamic finance assets - **\$30 billion** in premium volumes



Takaful contributes to the **UN Sustainable Development Goals**

### Community Resilience

Takaful promotes self-reliance in managing climate risks, through risk pooling



### Empowerment

of vulnerable communities excluded from traditional insurance due to religious barriers



### Wrong perception

that Takaful is exclusively for Muslims, when it is an inclusive, community based risk-sharing model



### Lack of regulation

dedicated to Takaful in many countries is stifling its growth



## Takaful Challenges

### Key Recommendations



1

**Policy actions** including conducive regulations and enabling environment

2

**National strategies** and plans

3

**Innovative solutions** tailored to sovereign requirements

4

**Private sector involvement**, attracting investment and establishing knowledge-sharing platforms



1

# Introduction

# 1

## Introduction

Climate change is intensifying extreme weather worldwide, causing floods, droughts, and storms with significant global economic and human costs. For example, rising sea levels imperil coastal regions and islands, threatening over 100 million more people with poverty by 2030<sup>1</sup>, and disproportionately impacting the most vulnerable.

Developing nations, where many communities rely on sectors highly vulnerable to climate risks like agriculture, livestock, fishing, forestry, and tourism, suffer amplified consequences. Farmers, informal workers, and other marginalized groups in these countries often lack access to vital financial resilience, heightening their vulnerability. Without safety nets such as social protection and risk transfer solutions, risks will multiply and poverty, inequality, food insecurity, displacement, and instability will worsen.

Global climate change risks are growing with severe consequences. In 2022, the number of disaster events increased by 7.5% from the 20-year average, from 405 to 435. This increase was accompanied by a significant rise in the average number of annual casualties, from 65,000 to 80,000 and a 50% increase in economic losses.<sup>2</sup>

The impacts of climate change are expected to cost global GDP by 10% (US\$23 trillion) annually by 2050 and displace over 216 million people in developing countries, risking economic disruptions, causing development setbacks, and increasing urban poverty.<sup>3</sup> Heat stress alone may cause global job losses of almost 80 million by 2030<sup>4</sup>, with total global economic losses exceeding \$178 trillion over 50 years, disproportionately affecting developing nations<sup>5</sup> with disruptions<sup>6</sup>.

Table 1: The Influence of Climate Change on Various Economic Sectors

<p><b>Agriculture</b></p>  <p>Climate change is expected to lower global food production by 6%<sup>7</sup>. A negative impact is projected on major crops (maize, rice, soybean, and wheat), with yield reductions of around -11% without adaptation, and -4.6% with adaptation.<sup>8</sup></p>	<p><b>Transportation</b></p>  <p>Coastal transport infrastructure faces threats from sea level rise and extreme weather. Assets exposed may reach \$35 trillion in 136 major port cities by 2070, factoring in climate change, population growth, and urbanization<sup>9</sup>. Furthermore, heavy rainfall-induced flooding hinders road and rail networks, leading to increased repair costs and economic losses.</p>
<p><b>Tourism</b></p>  <p>In certain cases, the expected rebuilding costs for tourism infrastructure are estimated at \$10 – 23.3 billion by 2050 and \$23.5 – 74 billion by 2080. Losses in annual tourism revenue due to declining coastal amenities could reach \$12.4 - 17.1 billion by 2080.<sup>10</sup></p>	<p><b>Fisheries</b></p>  <p>Ocean warming, acidification, and deoxygenation may reduce tropical fisheries catch by 40%, hitting economically vulnerable countries hardest.<sup>11</sup> This also leads to shifting fish migrations, limiting fishing communities' access to livelihood. Disturbingly, coral bleaching is also damaging vital reef fisheries habitats.</p>
<p><b>Energy</b></p>  <p>Direct climate impact costs on the energy sector in some cases may range from \$34 – 112 billion by 2050, based on emissions and adaptation levels.<sup>12</sup> Higher temperatures also reduce solar efficiency and energy generation in warm regions.</p>	<p><b>Infrastructure</b></p>  <p>Without adaptation, 0.2 – 4.6% of the world's population may face annual flooding by 2100 from a sea-level rise of 25 – 123 cm, resulting in anticipated annual losses of 0.3 – 9.3% of global GDP. To maintain coastal infrastructure, global adaptation costs are estimated at \$50-170 billion annually by 2050.<sup>13</sup></p>

While climate change affects communities globally, Muslim populations often have limitations to adopting conventional insurance solutions due to religious reasons, leaving them more vulnerable to various risks. Despite the recent growth of climate risk insurance markets, many mainstream approaches using conventional insurance solutions to manage climate risks are not Shari'ah<sup>14</sup>-compliant, excluding vulnerable communities from critical financial protection.

Takaful, a Shari'ah-compliant alternative to insurance, offers financial protection that is aligned with Islamic values and principles of risk and profit sharing, avoiding prohibited practices like using interest, speculation, and excessive uncertainty in financial transactions.

This paper advocates further developing and promoting Takaful as a policy solution, especially for building financial resilience for vulnerable communities lacking financial protection. It urges decision-makers to incorporate Takaful into national policies and outlines its benefits to build climate resilience where conventional insurance becomes inadequate.

The paper also offers recommendations for fostering an enabling environment for Takaful markets, aiming to encourage stakeholders, including donors and international organisations, to drive its advancement with practical and evidence-based solutions.



# 2

## Growing climate risks and limited resilience

# 2

## Growing climate risks and limited resilience

Climate change is escalating risks, including extreme weather events, water scarcity, coastal erosion, growing agriculture losses, and disease outbreaks in nations around the world, and developing countries with sizeable Muslim populations are no exception. These interconnected risks jeopardise economies, infrastructure, community health, and overall social cohesion.



**As per the Ecological Threat Report 2023<sup>15</sup>, over half of the 30 countries** that are most vulnerable to climate change impacts are Muslim-majority populations, predominantly concentrated in lower-middle to low-income categories. These climate-endangered developing countries are home to over 1.1 billion people facing acute risks from escalating droughts, heatwaves, flooding, and storms.



**According to the Global Climate Risk Index, historical data underlines the disproportionate climate impact on poorer nations.** Pakistan and Bangladesh alone, with a combined population of nearly 450 million, rank among the 10 most affected by climate disasters in the last two decades – each incurring GDP losses of around 10%.<sup>16</sup>



**Two-thirds of low to lower-middle-income countries with sizeable Muslim populations**, home to over a billion people, are critically unprepared for climate change. They have low financial resilience and ranked in the bottom half of the climate vulnerability and preparedness index.<sup>17</sup>

Member countries in the Organisation of Islamic Cooperation (OIC), face amplified socioeconomic impacts from climate risks due to high baseline vulnerability, and there is an urgent need to build resilience and adaptation capabilities to avoid reversing hard-won developmental gains.

The frequency of climate-related disasters has quadrupled in these countries, affecting more people and causing extensive economic losses. See Table 2. Targeted action is essential to build the financial resilience of these highly climate-vulnerable groups with limited resilience, ensuring no one is left behind to face the consequences of climate change.

Table 2: Major Climate Risks in countries with sizeable Muslim populations



### Extreme Weather Events and Disasters

Data shows that developing countries in the OIC face growing risks from climate-driven extreme weather events. Disaster risk in OIC-member countries has surged nine-fold since 1970<sup>18</sup>. In the last five decades, OIC-member countries experienced over 3,500 reported natural disasters, resulting in over a million deaths and \$328 billion in losses.<sup>19</sup> Countries like Pakistan, Bangladesh and Indonesia faced catastrophic flooding, causing extensive damages and economic losses. The MENA<sup>20</sup> region, particularly Yemen, Syria and Iraq are also seeing an increase in heatwave-related fatalities<sup>21</sup>, while overall the intensified storms are threatening livelihood, infrastructure, and essential services.



### Water Scarcity and Drought

There is an increasing aridity in these countries leading to chronic water scarcity and devastating droughts<sup>22</sup>. Recurring droughts in the Horn of Africa are also forcing internal displacements and disrupting farming and pastoral communities.<sup>23</sup> There is a declining water availability impacting domestic, agricultural, and industrial uses. In Syria, multi-year droughts have resulted in crop failures, livestock deaths, and increased food insecurity.<sup>24</sup> This resource scarcity, coupled with hazards of climate change, is raising the risk of civil conflict in many countries.<sup>25</sup>



### Rising Sea Levels and Coastal Vulnerability

Projections suggest sea level rise will be endangering large populations in low-lying coastal areas. Inundation affecting most fertile deltas, causing permanent losses of habitable and agricultural land. Salinization of freshwater sources and coastal erosion cause economic and infrastructure damage. Small Island Developing States (SIDS<sup>26</sup>) like the Maldives, Comoros, and Guinea Bissau and parts of mega-cities like Jakarta, Dhaka, Alexandria and Chittagong face submergence, requiring high adaptation costs to prevent this risk.<sup>27 28</sup>



### Changing Rainfall Patterns and Agricultural Challenges

Shifting precipitation patterns are posing risks to rain-fed agriculture, impacting economies, and bringing unpredictable variability in rainfall, thus decreasing crop yields<sup>29</sup>. Higher temperatures are also reducing peak plant growth and agricultural productivity. In addition, evapotranspiration rates are rising, increasing crop water requirements. This loss of livelihood in agriculture, livestock and fisheries is driving urban migration. In 2022, record rainfall in Pakistan submerged one-third of the country, affecting 33 million people and inflicting a damage of \$15 billion to the economy.<sup>30</sup>



### Health Risks and Disease Outbreaks

Climate change is raising healthcare costs in these countries, affecting public health. Specifically, heat stress leads to illnesses and deaths from related complications.<sup>31</sup> Epidemics (like malaria, dengue, cholera, etc.) are expanding their ranges of impact, while malnutrition and diarrheal diseases are resulting from declines in water quality, sanitation, and food production. Often, gender inequality and cultural norms affect women's health more during disasters due to limited ability to afford healthcare and sanitation facilities.<sup>32</sup>

In the last five decades, climate-related disasters have started to affect double the number of people, resulting in economic losses in the billions of dollars. See Table 3. During the last two years (2021 and 2022), these countries faced over 200 disasters, resulting in losses exceeding \$23 billion.

However, insurance claims were alarmingly low, totalling less than \$300 million. Despite an overall global increase in insurance coverage, OIC-member nations continue to experience a significant protection gap, with an average of just 2.7% of losses covered by insurance over the past decade compared to a global average of 26%.

Table 3: Effects of disasters on nations in the OIC over the last 50 years

Period	Total Disasters	Yearly Average	Deaths ('000)	Total People Affected (million)	Total Damages (US\$ Billion)	Insured Damages- OIC (%)	Insured Damages- Global (%)
1971-80	225	23	119	117	35	0	0.25
1981-90	425	43	354	207	49	0.53	9.77
1991-00	790	79	260	202	111	3.43	17.08
2001-10	1173	117	363	185	80	3.77	27
2011-20	908	91	43	214	53	2.68	26.3
2021-22	213	107	14	97	24	1.39	29.45

\*Table: compiled by author (data source: [CRED \(2023\) EM-DAT](#))

This stark contrast leaves countries with sizeable Muslim populations in precarious situations, endangering livelihoods and hindering their development after each climate-related disaster strikes without insurance protection. Delving deeper into this matter, insurance penetration remains remarkably low at 1% in the ten countries with a sizeable Muslim population, in sharp contrast to the global average of 4%. This condensed summary is outlined in Table 4 below.

Table 4 : Population ranking and use of insurance in countries with sizeable Muslim populations

Country	Population Rank (No. of Muslims)	Insurance Penetration (Non-life) (% of GDP) 2022	Insurance Density (Non -life) (US\$ per capita) 2022
Indonesia	1	0.5	26
Pakistan	2	0.3	4
India	3	1	22
Bangladesh	4	0.1	3
Nigeria	5	0.2	4
Egypt	6	0.3	14
Iran	7	1.0	40
Türkiye	8	1.3	133
Sudan*	9	0.48	7.89
Algeria	10	0.6	24
<b>Top 10</b>		<b>1.00</b>	<b>22.00</b>
<b>Global</b>		<b>4.0</b>	<b>500</b>

\*Data for Sudan was extrapolated from year 2021 and have been retrieved from Africa Reinsurance Corporation: (<https://www.africare.com/dashboards/SD>)

Table Data Source: [Swiss Re Institute. \(2023\). World insurance: Riding out the 2023 storm \(sigma No. 4/2023\)](#)



3

Challenges to  
conventional  
insurance adoption

# 3 Challenges to conventional insurance adoption

Religious beliefs significantly influence the attitudes and adoption of insurance among Muslim communities around the world. Studies have shown that strong adherence to Islamic teachings and values impact their attitudes towards and demand for conventional financial products, including insurance. This is mainly due to the presence of elements like Riba (interest), Gharar (uncertainty), and Maysir (speculation), which are considered non-Shari'ah-compliant.<sup>33 34 35 36</sup>

Figure 1: Introduction to Takaful and its Key Features

**Takaful** is a Shari'ah-compliant alternative to conventional insurance, emphasizing mutual, ethics-focused risk-sharing practices. It differentiates itself from traditional insurance by avoiding elements such as interest (Riba), excessive uncertainty (Gharar), and speculation (Maysir), which are prohibited under Islamic law.

Takaful operates on mutual assistance principles, where participants collectively contribute to a fund to cover claims and associated costs. This approach aligns with Islamic finance principles of voluntary contribution (Tabarru) and solidarity (Ta'awun) for the greater good. In Takaful, protection is derived from shared responsibility, promoting shared ownership, and reasonably minimizing profit-driven motives. In short, Takaful offers a mutual model for insurance based on principles of camaraderie and mutual care.



**Ethics-focused:** Rooted in mutual cooperation and avoidance of prohibited elements, including support for sustainable ventures, and aligning with ethical investment goals.



**Community solidarity:** Emphasizes collective responsibility, and focuses on reducing community-vulnerability.



**Customization:** Tailored, community-based solutions for specific needs, such as women, farmers, etc.



**Asset-Backed:** Links to real, asset-backed investments like climate-friendly investments in renewable energy, and avoidance of investments without underlying real assets.

Consequently, there has been limited uptake of financial protection among many Muslim communities due to the lack of religious alignment with conventional insurance products, leaving many Muslim communities in developing countries highly vulnerable to uninsured losses from escalating climate risks.

Overall, adherence to the Islamic faith generally discourages the purchase of conventional insurance but encourages the adoption of Takaful, underscoring the role of religious beliefs in shaping insurance-buying decisions among Muslim consumers. The compatibility of Takaful with Islamic values enhances its adoption probability, while perceived deviations from religious beliefs may deter the demand for conventional insurance.<sup>37 38</sup>

While Takaful addresses the issue of Shari'ah-compliant financial protection, it is important to note that Takaful faces the same challenges as conventional insurance for its widespread adoption, including limited awareness and financial literacy, affordability, and inadequate access to distribution channels. Addressing these complex challenges requires using tools that align with religious values and are tailored to the needs of communities.



# 4

**Takaful emerging  
as a potential  
solution**

# 4

## Takaful emerging as a potential solution

Takaful offers a promising model for financial protection while addressing the protection gap in countries with sizeable Muslim populations and where traditional insurance coverage has remained limited. A global survey indicates that overall, all regions show a fairly high level of optimism and confidence on the future of the Takaful industry.<sup>39</sup> The data also shows that OIC-member nations with a higher Takaful market share exhibit higher insurance penetration and density than countries with a lower Takaful market share (see Table 5).

Table 5: A selection of OIC-member countries showing relationship between Takaful's market share and insurance penetration

Insurance Data (Non-Life) – 2022					
Country	Takaful Market Share (%)	Takaful Growth Rate (%)	Growth Rate (%)	Penetration (% of GDP)	Density (US\$ per Capita)
Saudi Arabia	100	27.6	0	1.2	393
Malaysia	19.3	21.1	12	1.3	159
Brunei Darussalam	65	7	0	0.9	436
Indonesia	3.8	3.3	19.9	0.5	26
Pakistan	12	31.2	28.8	0.3	4
Bangladesh	14	15	15.7	0.1	3
Global	0.63	16.1	0.3	4	500

Source: Growth rate (%)<sup>40</sup>, Penetration (% of GDP)<sup>41</sup>, Density (US\$ per Capita)<sup>42</sup>, Saudi Arabia<sup>43</sup>, Malaysia<sup>44</sup>, Brunei Darussalam<sup>45</sup>, Indonesia<sup>46</sup>, Pakistan<sup>47</sup>, Bangladesh<sup>48-49</sup>, global Market Share (%)<sup>50</sup> and global Takaful growth rate (%)<sup>51</sup>

This illustrates the potential of Takaful to drive higher voluntary adoption of financial resilience solutions. The global Takaful market has experienced robust growth over the past decade, with a compound annual growth rate (CAGR) of 11.61%<sup>52</sup> while during the same period, conventional insurance grew at 2.6%.<sup>53</sup> This growth is particularly significant considering the smaller market base of Takaful but exhibiting sustained growth in most countries, underscoring Takaful's promise as an alternative model that can effectively expand financial inclusion and provide access to risk protection tools for underserved populations, aligned with their religious values.

Overall, Islamic finance has seen impressive growth in recent decades, with global Shari'ah-compliant assets reaching \$3.25 trillion in 2022. However, Takaful, a segment of Islamic finance, represents only 1% of these total Islamic finance assets<sup>54</sup>, and the global Takaful market, in terms of contribution (premium) volumes, was valued at \$30 billion in 2022,<sup>55</sup> a modest 0.05% of the \$6.78 trillion conventional insurance industry.<sup>56</sup> Nonetheless, it is expected that Takaful will grow to \$72 billion by 2030 in terms of contribution (premium) volumes, driven by expanding into new markets and maintaining the same growth rate.

The combined GDP of OIC-member countries increased by more than 21% from \$19.4 trillion in 2020 to \$23.6 trillion in 2022,<sup>57</sup> while insurance penetration (non-life) remained below 1% compared to the global average of 4% (Table 4). The growing Muslim population, coupled with increasing awareness of Takaful and rising incomes in many OIC-member countries, presents a promising opportunity for Takaful market growth in the future.

## Case examples: Effective Takaful Programmes Enhancing Climate Resilience

Analyzing Takaful success stories through case examples offers valuable insights into models that have effectively promoted climate resilience. Studying real-world instances helps uncover best practices and lessons for expanding Takaful solutions customized to local conditions in countries with sizeable Muslim populations. Selected examples are outlined in Figure 2 below.

Figure 2: Case examples



1

**Bridging Climate Risk Protection Gap for Pakistani Farmers<sup>58</sup>:** In Pakistan, where agriculture employs over 40% of the workforce, smallholder farmers lack the tools to manage intensifying climate risks. The Global Index Insurance Facility (GIIF) launched a Takaful scheme in 2017 to address this issue. Using an area yield index product, it covered major crops against losses from floods, droughts, and other perils. Initially piloted in five districts, the program expanded rapidly through outreach and customized design. By 2019, over 227,000 farmers had already participated. It aims to cover 3.5 million farmers by the end of 2023, providing efficient payouts after climate shocks to secure incomes and resilience.



2

**Empowering Kenyan Pastoralists – Innovative Livestock Takaful for Climate Resilience<sup>59</sup>:** In Kenya, livestock plays a vital role in the economy, but recurring droughts lead to livestock deaths, resulting in poverty among pastoralists. The Index-Based Livestock Takaful (IBLT) program addresses this issue, providing payouts when losses exceed 15%. By August 2017, approximately 4,000 pastoralists had enrolled in the program, which proved valuable during a severe drought by preventing the forced sale of livestock. The program emphasizes community-based risk-sharing and has expanded through awareness campaigns. Collaborations with the Livestock Research Institute, Cornell University, and the Index Insurance Innovation Initiative ensured effective program design. The World Bank has committed US\$67 million to enhance risk management for pastoralists. This demonstrates the global potential of Takaful for resilience and inclusion. In 2022, the IBLT program expanded to include an additional 10 counties in Kenya, totaling 15 covered counties.



3

**Scaling Parametric Takaful for Climate-Resilient Agriculture in Pakistan<sup>60</sup>:** In 2021, Salaam Takaful in Pakistan introduced a hybrid parametric crop, a Takaful product, offering financial protection to wheat farmers against climate risks. This utilizes satellite data to automatically trigger payouts when specific weather conditions are met, eliminating the need for loss assessment. Following a successful pilot phase, Salaam Takaful is now working on a nationwide expansion of this parametric Takaful model, ensuring that affordable and timely payouts enhance farmers' climate resilience. Its approach involves collaborations and technology, intending to benefit more than 6,000 agricultural households by 2026, thus furthering the reach of inclusive climate risk protection for vulnerable communities.

## 4

**Strengthening Climate Resilience of Farmers and Pastoralists in Sudan<sup>61</sup>:** The GEF/LDCF-funded Climate Risks Finance project (2014-20) aimed to enhance the climate resilience of Sudan's rain-fed farmers and pastoralists through a Shari'ah-compliant risk financing solution, with a total budget of \$24.5 million. The project directly impacted over 12,000 households across six states, effectively reaching approximately 3,300 farmers and pastoralists out of the 45,000 households targeted. Furthermore, it extended its influence on an additional 16,500 indirect beneficiaries through microfinance and weather-index insurance products. During the project's duration, there was a notable 140% increase in the government's budget allocation for weather monitoring organisations, alongside a more than 100% expansion of early warning system coverage in the designated states. By bolstering climate risk management and financial support, the project played a significant role in safeguarding the livelihoods of rural communities and promoting long-term resilience.



The above-mentioned Takaful case examples highlight its potential for enhancing climate resilience with context-specific, Shari'ah-compliant risk solutions. Key lessons include:



### Stakeholders' engagement

In the product design process to clarify needs, ensure synergy, and encourage adoption.



### Capacity building

Of stakeholders for strengthening Takaful solutions and efficient distribution methods to facilitate market access.



### Partnerships and collaboration

Between public, private, and communities to expand climate information systems, as well as leadership from the government, combined with accountability for project targets, is crucial for success.

Expanding these tailored Takaful models through community-oriented design and partnerships can significantly enhance climate resilience and provide widespread protection for vulnerable populations.

The key factors driving global Takaful growth include the increasing share of Islamic financial instruments, growing population, growing awareness of Takaful's benefits, and innovative product development catering to diverse customer segments.

Takaful has the potential to become a significant part of the Islamic finance industry, both in terms of premium volume and investment in Shari'ah-compliant instruments, through collaborative efforts, creating supportive environments, investing in innovation and capacity building, raising awareness, and developing customized models. Strategically implementing Takaful solutions can broaden the scope of inclusive risk protection for underserved groups.

With a similar line of resilience benefits insurance provides, Takaful offers an ethics-focused, Shari’ah-principled risk protection alternative, supporting the Sustainable Development Goals (SDGs)<sup>62</sup>. It does so by enhancing access to affordable risk protection, contributing to objectives such as poverty reduction, food security, gender equality, and climate resilience. Having various similarities with insurance, Takaful’s potential to promote advancements in these interconnected SDGs and climate-related goals also highlights its effectiveness as a tool for managing climate risks, focusing on creating a positive impact while providing an inclusive solution for populations sensitive to Islamic finance.

Takaful contributes to several SDGs, including poverty alleviation, zero hunger, gender equality, decent work, climate action, and partnerships.

Figure 3: Takaful’s alignment with the Sustainable Development Goals and Climate Agenda



Rooted in the principles of cooperation, risk sharing, and community solidarity, Takaful’s risk-pooling mechanism offers a valuable climate adaptation tool. Takaful complements climate finance to protect against risks by providing an alternative to conventional insurance.

However, unlocking these benefits for resilience-building necessitates addressing potential challenges related to **consumer demand** (behavioral aspects, awareness, and financial capacity), **Takaful supply** (risk capacity, costs, access to re-takaful or reinsurance), and the **regulatory and financial environment**. It is crucial to leverage Takaful’s strengths in delivering tailor-made and comprehensive risk management solutions that align with the values of underserved communities while proactively surmounting barriers to realize its full potential. A concise overview of the potential advantages and challenges can be found in Figures 4 below.

Figure 4: Potential advantages and challenges for Takaful to build climate resilience

Advantages of Takaful for Climate Resilience	
	<b>Financial Protection and Risk Management:</b> Takaful offers affordable, Shari’ah-compliant risk management for crops, livestock, assets, income, and tailored health and life protection, complementing disaster aid.
	<b>Empowerment:</b> Takaful empowers vulnerable communities, including women, farmers, micro-entrepreneurs, and low-income households, who are otherwise excluded from traditional insurance solutions due to religious barriers.
	<b>Community Resilience:</b> Takaful promotes collective action, social stability, and self-reliance in managing climate risks, reducing dependence on emergency aid, and contributing to sustainable development and poverty reduction.
Challenges in Promoting Takaful for Climate Resilience	
	<b>Perception Challenges:</b> Often, there are misconceptions about Takaful being exclusively for Muslims. In fact, Takaful is an inclusive, ethics-focused, community-based risk-sharing model open to all. Also, target populations have limited awareness about Takaful principles and benefits, requiring targeted awareness campaigns. Takaful products and processes are seen to be more complex compared to insurance, necessitating simplification.
	<b>Operational and Technological Limitations:</b> Limited data on target markets, associated risks, and constrained actuarial capabilities hinder Takaful’s scalability. Also, a shortage of qualified Shari’ah scholars and trained professionals impedes innovation, necessitating capacity building. Smaller Takaful companies also face resource constraints when investing in digital platforms and customer-focused technologies, which are essential for growth. Most importantly, re-Takaful capacities are usually limited, especially for climate risks.
	<b>Regulatory and Legal Barriers:</b> Ambiguous regulatory treatment and lack of dedicated Takaful regulations in many countries lead to uncertainty. Clear frameworks are needed for licensing, governance, capital adequacy, and dispute resolution tailored for Takaful. Underdeveloped capital markets restrict Takaful investment options in Shari’ah-compliant asset classes, necessitating regulatory support for expanding Islamic financial instruments.

Despite Takaful’s potential to bolster the financial resilience of vulnerable communities, it is crucial to acknowledge the challenges mentioned above. Additionally, Takaful may not always serve as a sole solution; at times, it should complement other climate finance tools, especially at the sovereign level, to fully maximize its impact on climate resilience and where risks are beyond the size and remit of Takaful alone.



**5**

**High-level  
recommendations**

# 5 High-level recommendations

Realising Takaful's potential as an inclusive tool to enhance financial resilience to climate risks necessitates collaborative efforts, particularly from various stakeholders such as governments, development organisations, and institutions. Establishing a Global Takaful Forum for Climate Risks can serve as a dedicated platform to promote its widespread adoption, like the InsuResilience Global Partnership. This forum can take the form of a global alliance of stakeholders working on developing standards, offering technical support, implementing pilot projects, conducting research, and engaging in advocacy and awareness initiatives.

It can facilitate knowledge exchange, capacity development, and the integration of customised Takaful solutions by fostering collaboration among Takaful stakeholders. Additionally, strategic recommendations encompass integrating Takaful into national climate strategies, deploying it at the sovereign level, and fostering public-private partnerships. These coordinated actions can collectively unleash Takaful's potential to enhance climate resilience and financial inclusion for the most vulnerable communities.

## 1. Key Policy Steps to Harness Takaful for Climate Resilience

Realizing the potential of Takaful for climate resilience and financial inclusion requires specific policy actions. This recommendation highlights essential steps for governments and regulators to facilitate Takaful's adoption, establish conducive regulations, and encourage collaboration.

- ▶ **Promoting Takaful Adoption:** Establishing a dedicated platform to boost Takaful adoption involves tailored policies, subsidies, and awareness initiatives, including tax incentives and targeted communication through various channels. Public entities and government enterprises can be encouraged to adopt Takaful, creating a stable customer base. Nationwide awareness campaigns are crucial to educate the public about Takaful's role in climate resilience.
- ▶ **Customized Regulatory Systems:** Developing flexible regulatory systems based on Shari'ah principles for Takaful operators is essential. This includes clear guidelines, incentives, and potential tax breaks to promote adoption and accessibility. Policymakers should integrate Takaful into climate adaptation plans to enhance protection against climate risks.
- ▶ **Stimulating Collaboration:** Promoting collaboration among stakeholders is vital for evidence-based Takaful solutions. This can include feasibility studies, pilot projects, and research for testing Takaful models and effective solutions deployment. National and global cooperation should be encouraged to showcase Takaful's potential while engaging donors and organizations to secure financial support for these activities. Another important aspect of this would involve addressing the issues and challenges at the local, regional and global levels and proposing Standardization of Takaful solutions and making them ready to be implemented in most target countries<sup>63</sup>.

## 2. National Integration Strategies for Takaful and Climate Resilience

Harnessing Takaful's potential for climate resilience necessitates its inclusion in national strategies and policies. This recommendation outlines strategic measures for stakeholders to evaluate climate risks, embed Takaful into adaptation policies, and establish mechanisms for deploying Takaful-based solutions.

- ▶ **Climate Risk Assessment and Gap Analysis:** Conduct thorough vulnerability assessments to identify climate risks, vulnerable populations, and protection gaps. Evaluate informal coping mechanisms and existing gaps that Takaful can fill. Calculate the economic costs of climate impacts to justify investments in resilience.
- ▶ **Incorporating Takaful into National Strategies:** Recognize Takaful's role in climate adaptation and integrate it into policies for exposed sectors like agriculture, livestock, fishing, and tourism. Assess the potential impact of Takaful integration into key adaptation policies, such as National Adaptation Plans (NAPs) and agricultural strategies. Promote gender-inclusive Takaful products to ensure women's access to financial protection against climate risks.
- ▶ **Developing Mechanisms for Takaful Integration in Climate Financing:** Establish national and regional Takaful funds for addressing priority climate risks. Attract support from donors and foundations to subsidize Takaful contributions (premiums) through challenge funds and matching grants for underserved communities. Explore using Islamic financial instruments like Green Sukuk to raise Shari'ah-compliant capital to support Takaful expansion.

## 3. Leveraging Takaful for Sovereign Climate Risk Transfer

Takaful offers an option for governments to manage climate risks and enhance the resilience of public assets and communities where there are religious barriers to the mass adoption of conventional insurance. This recommendation provides for implementing sovereign-level climate risk transfer through Takaful. It emphasizes collaboration with financial institutions to access Shari'ah-compliant capital and develop innovative solutions tailored to sovereign requirements, such as protecting critical public assets, infrastructure, and vital crops.

- ▶ **Utilizing Takaful for Sovereign Climate Risk Transfer:** Before implementing sovereign-level climate risk transfer through Takaful, one must evaluate Takaful's potential for protecting public-owned assets and infrastructure. If viable, this can be followed by establishing national and regional Takaful pools, securing funding from multilateral climate funds like the Green Climate Fund (GCF), developing national and sub-national Takaful schemes, and creating a pipeline of global re-Takaful operators for securing sovereign-level risks.
- ▶ **Collaborating with Islamic Financial Institutions:** To access Shari'ah-compliant capital for sovereign Takaful solutions, governments can partner with Islamic banks and institutional investors, engage with multilateral climate resilience programs, and collaborate with Green Sukuk issuing entities.
- ▶ **Developing Innovative Takaful Solutions:** Customizing innovative Takaful solutions for critical areas like public assets, infrastructure, and the agriculture sector, using technology and leveraging microfinance institutions' infrastructure to streamline processes, and offering subsidized sovereign Takaful participation to vulnerable communities for enhanced climate resilience.

## 4. Promoting Public-Private Collaboration for Climate Resilience

Enhance the focus on the significance of partnerships between the public and private sectors to expand the impact of Takaful in increasing climate resilience. This includes strategies for encouraging private sector involvement, attracting investments, and establishing knowledge-sharing platforms to accelerate Takaful innovation and its contribution to climate resilience.

► **Facilitating Collaboration between Takaful Operators and Public Entities:** Encourage policies that promote public-private collaboration in Takaful solutions, covering aspects like product design, distribution, and claims processing. Governments can initiate pilot projects for climate-related Takaful in collaboration with donors and Takaful companies to promote public-private partnership models. Promote national and global forums for policy discussions on Takaful to facilitate functional engagement aligned with policy and market requirements.

► **Attracting Private Sector Investment in Takaful Initiatives:** Encourage donors and governments to provide matching grants and technical support to Takaful operators for the development of innovative climate Takaful solutions. Consider offering tax incentives to investors in Takaful operations and explore smart subsidies to incentivize private investments in Takaful startups and products, catalyzing innovation in distribution methods and climate risk solutions. Donors and public sector investment institutions can explore equity-backed investments to attract institutional investors into Takaful ventures and utilize blended financing to expand Takaful providers' risk capacity.

► **Fostering Knowledge Sharing and Capacity Building for Public-Private Partnerships:** Promote exchanges between public and private stakeholders through workshops and knowledge-sharing sessions to facilitate capacity building and relationship development. Support collaborative initiatives, including feasibility studies, pilot projects, and research to enhance knowledge sharing. Joint analytical work can provide insights into effective Takaful deployment, showcasing successful public-private partnership models and offering templates for replication, thereby boosting confidence in partnerships. These research and collaborative programs support the development of relevant products of Takaful against climate risks, backed by green awqaf or zakat programs<sup>64</sup>.

Takaful holds substantial untapped potential and can foster financial inclusion and climate resilience in countries with sizeable Muslim populations. Scaling up Takaful necessitates a collaborative approach involving multiple stakeholders. This effort encompasses creating supportive environments, enhancing regulatory and market participant capacities, fostering innovation, and demonstrating feasibility through pioneering partnerships.

Policymakers play a crucial role in promoting Takaful, integrating it into adaptation strategies, and encouraging public-private cooperation. Donors and international organisations can seize the opportunity to offer technical and financial support for pilot projects, research initiatives, and knowledge sharing.

Developing sustainable business models is vital to incentivise private sector engagement, ensuring the creation of inclusive and affordable Takaful solutions for climate risks. This entails investments in technology integration and distribution networks.

Stakeholders must collectively embrace the shared responsibility of safeguarding lives and livelihoods in the face of escalating climate disruptions. Through coordinated efforts spanning various sectors, Takaful can provide accessible climate-resilient risk protection to all.

# Endnotes

- 1 [World Bank \(2015\) Climate change could result in 100 million poor | AP News](#)
- 2 [CREED \(2023\) EM-DAT: The International Disaster Database. Université catholique de Louvain.](#)
- 3 [World Bank \(2016\) Shock waves: Managing the impacts of climate change on poverty \(Report No. 100758\)](#)
- 4 [ILO \(2019\) Working on a warmer planet: The impact of heat stress on labour productivity and decent work.](#)
- 5 [Deloitte \(2021\) The turning point: A global summary of fossil fuel subsidies and the road ahead to phasing them out.](#)
- 6 [International Food Policy Research Institute \(2022\). Global Food Policy Report.](#)
- 7 [International Food Policy Research Institute \(2022\). Global Food Policy Report.](#)
- 8 [Hasegawa, T., Wakatsuki, H., Ju, H. et al. \(2022\) A global dataset for the projected impacts of climate change on four major crops. \*Sci Data\* 9, 58.](#)
- 9 [Nicholls, et al. \(2008\). Ranking port cities with high exposure and vulnerability to climate extremes: Exposure estimates. OECD En. Working Papers.](#)
- 10 [UNCC Learn \(2010\) Modelling the Transformational Impacts and Costs of Sea Level Rise in the Caribbean.](#)
- 11 [Cheung, et al. \(2010\) Large-scale redistribution of maximum fisheries catch potential in the global ocean under climate change. \*Global Change Biology\*.](#)
- 12 [Council on Foreign Relations. \(2019\). Impact of climate risk on the energy system.](#)
- 13 [Hinkel, et al. \(2014\) Coastal flood damage and adaptation costs under 21st century sea-level rise. \*Proceedings of the National Academy of Sciences\*.](#)
- 14 “Shari’ah”, also known as Islamic law, is a framework rooted in Islamic principles from the Quran and Hadith. It guides various aspects of Muslim life, encompassing morality, social justice, business, and family matters, aiming to provide a comprehensive foundation for personal and communal conduct, covering both religious rituals and civil and criminal laws.
- 15 [Institute for Economics & Peace \(2023\) Ecological Threat Report 2023: Analysing Ecological Threats, Resilience & Peace, Sydney, November 2023.](#)
- 16 [Germanwatch \(2021\). Global climate risk index 2021. Who suffers Most from Extreme Weather Events?](#)
- 17 [University of Notre Dame Global Adaptation Initiative. \(2023\). ND-GAIN country index: A tool for adaptation to climate change Updated January 30, 2023.](#)
- 18 [SESRIC \(2021\). Managing Disasters and Conflicts in OIC Countries.](#)
- 19 [World Meteorological Organization \(2023\). State of the global climate 2022 \(WMO-No. 1316\).](#)
- 20 [Middle East and North Africa.](#)
- 21 [Institute for Economics & Peace \(2023\) Ecological Threat Report 2023: Analysing Ecological Threats, Resilience & Peace, Sydney, November 2023.](#)
- 22 [The World Bank Group \(2020\) The Economic Impacts of Climate Change and Water Scarcity in the Middle East.](#)
- 23 [World Meteorological Organization \(2023\). State of the global climate 2022 \(WMO-No. 1316\).](#)
- 24 [De Châtel \(2014\). The role of drought and climate change in the Syrian uprising: Untangling the triggers of the revolution. \*Middle Eastern Studies\*.](#)
- 25 [Resource scarcity, climate change and the risk of violent conflict \(English\). World Development Report background papers ; 2011 Washington, D.C. : World Bank Group.](#)
- 26 [As defined by the United Nations.](#)
- 27 [Africa Center for Strategic Studies \(2022\) Rising Sea Levels Besieging Africa’s Booming Coastal Cities, Published Nov 8, 2022.](#)
- 28 [World Bank. 2010. Economic of Adaptation to Climate Change: Bangladesh, Volume 1. Main Report. © Washington, DC.](#)
- 29 [Sultan et al. \(2013\). Assessing climate change impacts on sorghum and millet yields in the Sudanese and Sahelian savannas of West Africa. \*Science of The Total Environment\*.](#)
- 30 [Pakistan: Flood Damages and Economic Losses Over USD 30 billion and Reconstruction Needs Over USD 16 billion - New Assessment.](#)
- 31 [WHO \(2018\). Heat and Health.](#)
- 32 [UN Women \(2022\) Explainer: How gender inequality and climate change are interconnected.](#)
- 33 [Browne, M.J. and Kim, K.A., \(1993\). An international analysis of life insurance demand. \*Journal of Risk and Insurance\*, pp.616-634.](#)
- 34 [Al Mahi, Abu Saad Md Masnun \(2018\) A cross-country analysis on the effect of religiosity on takaful demand. Masters thesis, Universiti Putra Malaysia.](#)
- 35 [Hashim, N. H. \(2006\). Islamic Life Insurance Purchasing Decision: A Preliminary Study. \*The Journal of Muamalat and Islamic Finance Research\*, 3\(1\), 153-170.](#)
- 36 [Souiden, Nizar & Jabeur, Yosr. \(2015\). The impact of Islamic beliefs on consumers’ attitudes and purchase intentions of life insurance. \*International Journal of Bank Marketing\*. 33. 423-441. 10.1108/IJBM-01-2014-0016.](#)
- 37 [Hamid, M.A. and Othman, M.S., \(2009\). A study on the level of knowledge and understanding among Muslims towards the concepts, Arabic and Shari’ah terms in Islamic insurance \(Takaful\). \*European Journal of Social Sciences\*, 10\(3\).](#)
- 38 [Amin, H. et al., \(2011\). Determinants of customers’ intention to use Islamic personal financing. \*Journal of Islamic Marketing\*.](#)
- 39 [CIBAFI Global Takaful Survey](#)
- 40 [Swiss Re Institute \(2023\) Sigma 3/2023 World Insurance.](#)
- 41 [Swiss Re Institute \(2023\) Sigma 3/2023 World Insurance.](#)
- 42 [Swiss Re Institute \(2023\) Sigma 3/2023 World Insurance.](#)
- 43 [Saudi Arabia Monetary Authority \(2022\) The Saudi Insurance Market Report.](#)
- 44 [Malaysian Takaful Association \(2022\) Annual Report: Industry Statistics.](#)
- 45 [Brunei Darussalam Central Bank \(2023\) BDCB Statistical Bulletin.](#)
- 46 [Indonesia Financial Services Authority \(OJK\) \(2023\) Roadmap for the Development and Strengthening of the Indonesia Insurance Industry 2023-2027.](#)
- 47 [Securities and Exchange Commission of Pakistan \(2023\) Insurance Industry Statistics 2022.](#)
- 48 [Islamic Financial Services Board \(2023\) The Islamic Financial Services Industry \(IFSI\) Stability Report 2023.](#)
- 49 [Allied Market Research \(2023\) Global Takaful Insurance Report.](#)
- 50 [Islamic Financial Services Board \(2023\) The Islamic Financial Services Industry \(IFSI\) Stability Report 2023.](#)
- 51 [Islamic Financial Services Board \(2023\) The Islamic Financial Services Industry \(IFSI\) Stability Report 2023.](#)
- 52 [Islamic Financial Services Board \(2023\) The Islamic Financial Services Industry \(IFSI\) Stability Report 2023.](#)
- 53 [Swiss Re Institute \(2023\) World insurance market developments in 5 charts.](#)
- 54 [Islamic Financial Services Board \(2023\) The Islamic Financial Services Industry \(IFSI\) Stability Report 2023.](#)
- 55 This includes contribution received by mutual insurers in Saudi Arabia and premiums received by insurance companies in Iran which adhere to different interpretation of Shari’ah law on insurance practices.
- 56 [Swiss Re Institute \(2023\) Sigma 3/2023 World Insurance.](#)
- 57 [Islamic Center for Development of Trade \(2022\) ANNUAL REPORT ON TRADE AMONG THE OIC MEMBER STATES.](#)
- 58 [World Bank \(2020\) Global Index Insurance Facility.](#)
- 59 [Business Daily \(2014\) Insurer to compensate livestock farmers.](#)
- 60 [E-Pact \(2021\) Independent Evaluation of ARC: Pilot Impact Country Study – Senegal.](#)
- 61 [UNDP-IEO \(2021\) Climate Risk Finance For Sustainable And Climate Resilient Rainfed Farming And Pastoral Systems, Sudan. Terminal Evaluation Report.](#)
- 62 [UN: Sustainable Development Goals](#)
- 63 [Improving the Takaful Sector in Islamic Countries](#)
- 64 [Unlocking Islamic Climate Finance](#)



UNDP Insurance  
and Risk Finance  
Facility

**IsDB**   
البنك الإسلامي للتنمية  
Islamic Development Bank

 المعهد  
**ISDBI**  
معهد البنك الإسلامي للتنمية  
Islamic Development Bank Institute

