

## HOW LEBANON BANKS RESPONSE TO CLIMATE CHANGE

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**Abstract:** *Climate change may be a key concern over all segments of the economy and the central bank’s ability to meet its financial and budgetary stability targets. We argue that two types of dangers are especially significant for central banks. To begin with, a weather-related characteristic disaster seem trigger monetary and macroeconomic instability in the event that it seriously harms the adjust sheets of families, corporate, banks, and guarantees (physical risks). Second, a sudden, unexpected fixing of carbon emission approaches seem lead to a jumbled re-pricing of carbon-intensive resources and a negative supply shock (move dangers). Climate change will have a developing impact on the steadiness of the banking system, possibly contributing to future monetary crises. This paper will analyze how Lebanon banks response to climate change, to impose costs on Lebanon directly and across all segments of Lebanon’s economy and society.*

**Keywords:** *Climate Change, natural disasters, Lebanon crisis economic, banking sector, monetary policy.*

### I. INTRODUCTION

Over the last few years, Lebanon has been through colossal challenges that have cleared out no fragment of its society unscathed. The country has been challenged by financial crisis, the COVID-19 pandemic, the Port of Beirut explosion, natural catastrophes and drawn-out political end. These challenges have disabled Lebanon, discouraged its improvement and pulverized its capacity to manage. To top it all off, in climate change Lebanon faces another challenge: a risk

multiplier that will intensify current binds, and one that requires resolute activity by the government and the individuals, both within the short-term and well into long term.

Economically, Lebanon is reeling from a long time of financial crises, which have done more than half of the population into poverty and numerous into extraordinary poverty, caused others to lose their homes and wiped away the investment funds of many more. The Ministry of Environment evaluated that climate change will cause a 14% fall in Lebanon's GDP by 2040, falling advance to 32% by 2080 (Najat Rochdi, 2021).

In terms of livelihoods, climate change is anticipated to increase temperatures and make water assets scarcer. This will negatively influence agricultural output and the employments of numerous communities. Higher temperatures will too result in increased vitality demand, putting a strain on businesses and administrations as they struggle to meet their control needs.

Health wise, the combination of COVID-19 and the Beirut port explosion in August 2020 starkly uncovered the delicacy of Lebanon's health system. Climate change will cause higher rates of irresistible infection, rises in sickness and passing due to higher temperatures, expanded lack of healthy sustenance from decreased agricultural output and higher frequency of extraordinary occasions. This will result in more annual passing than nowadays and strain accessible capacity in urban and regional well-being facilities.

For Lebanon's normal resources, climate change is already in plain locate. The rapidly spreading fires within the country's North that have burnt expansive swathes of pine forests have already caused the passing of at least one firefighter and forced a few to escape their homes in look of shelter. The month of July this year was the sultriest ever recorded, and the fires that have moreover burnt

throughout the summer of 2021 in Greece, Italy, the Joined together States and Canada allow us a glimpse into the new normal.

Despite these challenges, the government of Lebanon has made critical strides in its reaction to climate change. In 2021, it submitted it's changed Nationally Determined Contribution (NDC, 2021), a key component of countries' worldwide commitment under the Paris Agreement. The climate action arranged under the NDC up to 2030 can significantly contribute to Lebanon's economic recovery from COVID-19, tending to basic challenges such as energy, waste, and water, as well as make work opportunities and progress socio-economic conditions. Lebanon is additionally setting out on a National Adaptation Plan, which gives a stage to standard climate adjustment over its administration structures and forms, improving versatility of Lebanese communities.

In handling the bundle of crises Lebanon is going through, the government ought to incorporate and prioritize climate arranging and disaster risk administration in all changes moving forward. This would accelerate Lebanon's way towards economic improvement, and upgrade the security of the economy, employments and environments.

Climate change implies that we may face more visit or extreme climate occasions, such as floods, dry seasons, and tropical storms on the off chance that activity isn't taken. These occasions bring physical dangers that can have a negative effect on businesses and the overall economy. At the same time, steps taken to assist reduce climate change can result in move dangers, as carbon charges and other approaches add new working costs. There's a complex exchange between physical and move dangers that can affect the operational soundness, financial soundness, and budgetary execution of firms.

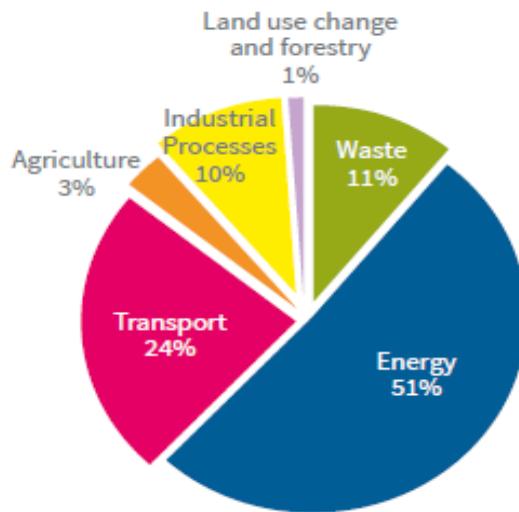
The Financial Steadiness Board set up the Task Force on Climate-related Financial Disclosures (TCFD) to create suggestions for more successful

administration of climate change dangers in budgetary markets. TCFD prompts the utilize of situation examination to evaluate climate dangers, and inquires banks to deliberately uncover the comes about in yearly filings, at the side the measurements and forms used to conduct the investigation. This major commercial bank needed to reply to TCFD's transparency measures by taking steps to way better get it the effect of climate alter on its advance portfolio.

## **II.LEBANON AND CLIMATE CHANGE**

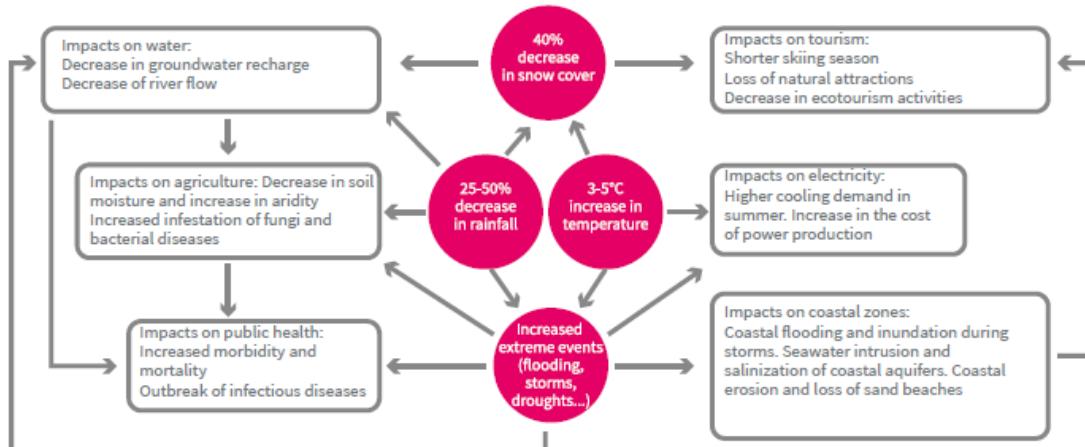
There's unequivocal logical information that Earth's climate is changing. Normal temperatures are consistently rising. Precipitation amounts, designs and geographic conveyance have gotten to be definitely variable. Snow altitude is moving, and extraordinary occasions like overwhelming rainstorms and surges, warm waves and dry spells are getting to be more visit. These are all signs of climate change.

Although Lebanon's share of the worldwide GHG outflows is fair 0.07%, climate change will cause genuine issues for the Lebanese environment and economy (MoE/UNDP/GEF, 2016). As seen in figure 1, vitality, transportation and squander are the most sources of the nation GHG outflows. Handling these sources, and relieving the GHG outflows whereas diminishing the dangers from climate alter are the most administrative challenges to boost the economy. Contradistinction, the private sector's challenges are to remain current with the unused green advances, prepare their group and adjust themselves with nearby arrangements as well as monetary component to advantage from the Paris Agreement and decrease the dangers of climate alter. Figures 2and 3 summarize the dangers and openings confronted by businesses.



**Figure 1: Sources of GHG emissions in Lebanon**

Source: MoE/UNDP/GEF, (2016). Lebanon's Third National Communication to the UNFCCC



**Figure 2: Impacts and Vulnerabilities from climate change on Lebanon.**

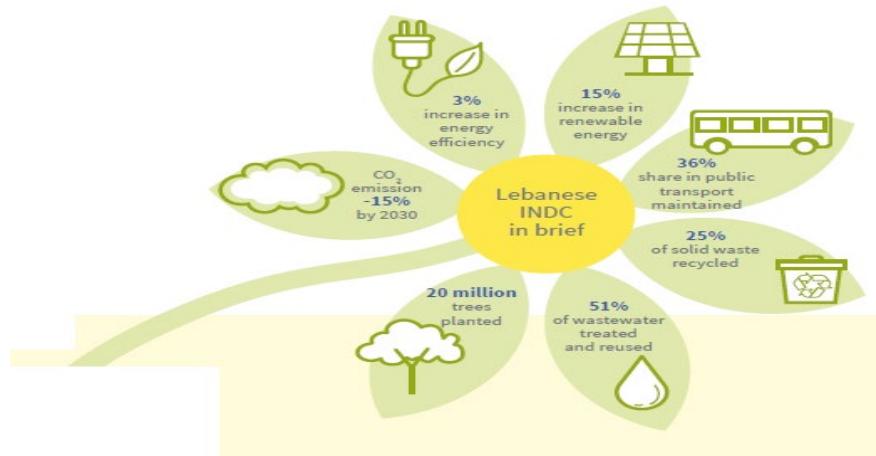
Source: MoE/UNDP/GEF, (2016). Lebanon's Third National Communication to the UNFCCC.



**Figure 3: Opportunities from Climate change on Lebanon**

Source: MoE/UNDP/GEF, (2016). Lebanon's Third National Communication to the UNFCCC.

In compliance with the arrangements of the Paris Agreement, Lebanon distributed its Planning Nationally Determined Commitment (INDC) to mobilize universal back and set a long-term technique to decrease national GHG emanations and move forward flexibility to negative impacts of climate change. The INDC too comprises Lebanon's gaps and needs that are anticipated to prevent or moderate down proficient and driven usage of broadly set relief and adjustment targets. The INDC is getting to be the climate activity street outline for the Lebanese government for the 2030 skyline. The vital consideration of climate alter by businesses in their motivation ensures their arrangement with the worldwide force on climate change administration and improves their advertise competitiveness (Fig 4). To maximize the financial benefit for both government and trade, and have a successful INDC, government and commerce ought to complement each other; whereas the primary ought to clear the way (legitimate, foundation, capture financial).



**Figure 4: Lebanon's Commitment to Combat Climate Change**

Source: MoE/UNDP/GEF (2016). *Economic Costs to Lebanon from Climate Change: A First Look*. Beirut, Lebanon.

In Lebanon, the full costs of climate change on the economy might break even with USD 1,900 million in 2020, rising to USD 138,900 million in 2080 (ASHRAE, (2005). These costs may incorporate higher food costs, higher power and heating/cooling bills, increased costs on recreation exercises like skiing and climbing, expanded wellbeing care cost, etc.



**Figure 5: Climate Change – Risks and Opportunities for Businesses**

Source : <https://www.weforum.org/agenda/2015/11/open-letter-from-ceos-to-world-leaders-urging-climate-action/>

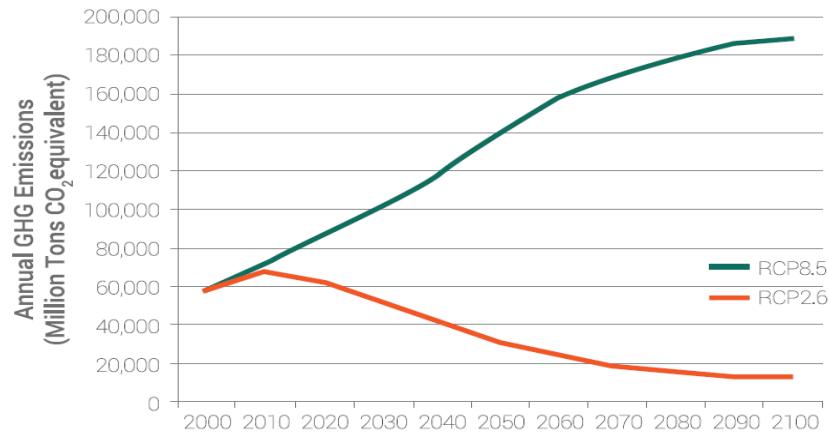
### **III.POTENTIAL CLIMATE CHANGE IMPACTS ON LEBANESE ECONOMIC**

Amid the critical hole between the total impact of greenhouse gas outflow decreases reported within the 2015 Nationally Determined Commitments (NDCs) and the outflows pathway reliable with the Paris Agreement goal, the worldwide call for desire should be met with an increment in climate activity efforts. Additionally, the IPCC Extraordinary Report on the impacts of worldwide warming of 1.5°C over pre-industrial levels and related worldwide greenhouse gas emanation pathways clearly calls for more grounded moderation measures, as well as improved strength, in arrange to avoid disastrous climate changes.

**a. Climate change will impose costs on Lebanon specifically, through warm waves, dry spells, storms, etc., and by implication, by means of slower economic growth**

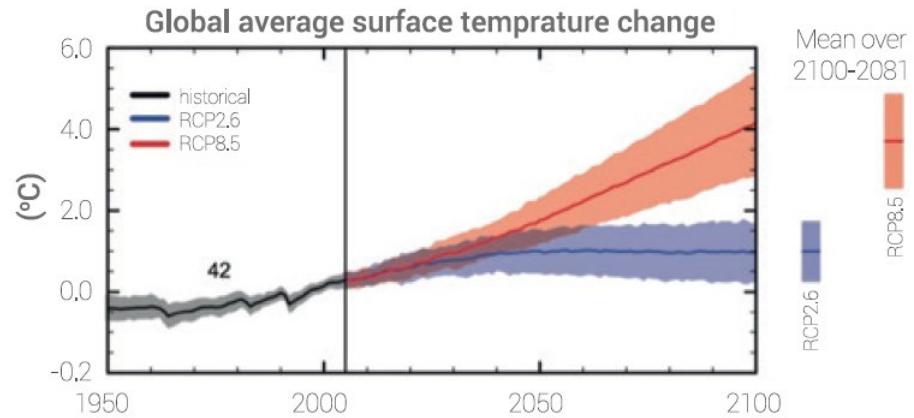
Changes in climate stem from worldwide outflows of carbon dioxide (CO<sub>2</sub>) and other greenhouse gasses (GHGs). The direction of worldwide GHG emanations anticipated through 2100 under the highest-emissions situation (called RCP8.5) and the lowest-emissions situation (RCP2.6) anticipated by the Intergovernmental Board on Climate Change (IPCC) (Fig 6) .

Under the highest-emissions situation, which speaks to a continuation of current patterns, temperatures would increment on a near-linear direction all through the century. With the lowest-emissions situation, they would increase through the center of the century and after that level off. Average surface temperatures in 2081-2100 would exceed those that prevailed in 1986-2006 by almost 4–6°C under RCP8.5, and 2°C under RCP2.6 . These temperature increments would include to an increment of 0.61°C watched between 1850–1900 and 1986–2005 (Fig.7).



**Figure 6: Actual GHG emissions, 2000 and 2010, and projected emissions under RCP8.5 and RCP2.6, 2020-2100**

Source: RCP Database (2015) and Myrhe et al. (2013; p. 714)

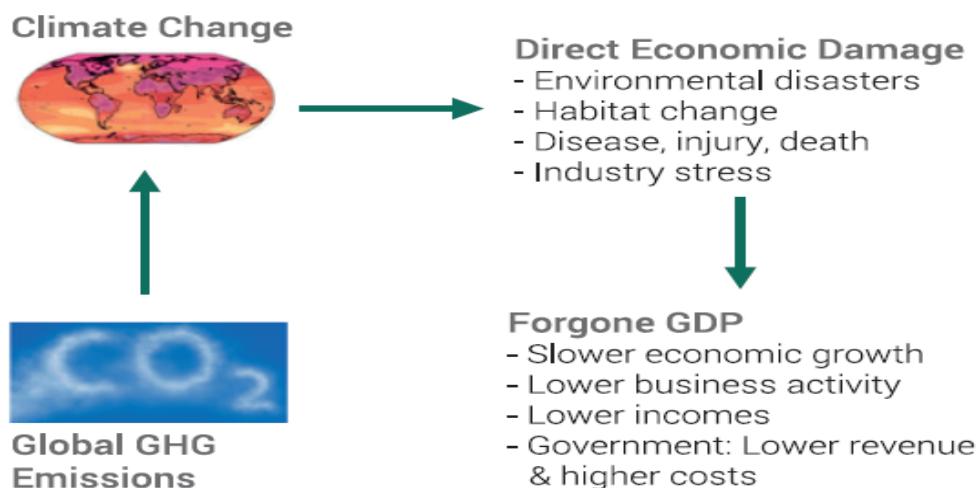


**Figure 7: Observed changes in annual average surface temperature, 1950–2010, and projections under RCP8.5 and RCP2.6, 2020-2100**

Source: IPCC (2013; p. 21)

In case current patterns in GHG emanations proceed, expected changes in climate likely would impose financial costs on Lebanon both directly and indirectly (Fig 8). Coordinate costs would materialize as higher temperatures, changes in precipitation, and extraordinary climate occasions, such as storms, decrease

agricultural efficiency, unfavorably influence human well-being, cause flooding, and impose comparable damage on diverse sections of Lebanon's economy and society. Indirect costs would materialize as the direct costs moderate the country's financial development. The slower development would diminish Lebanon's Gross Domestic Product (GDP) and lower business activity. These impacts, in turn, would lower salaries for workers and families and cause government to involvement lower incomes and higher costs.



**Figure 8: Climate change will impose costs on Lebanon by generating direct economic damage and slowing growth in GDP**

**b. Total costs might rise to USD 1,900 million in 2020, rising to USD 138,900 million in 2080**

The anticipated costs Lebanon would involvement in 2020, 2040, and 2080 from the total impacts of worldwide GHG outflows between 2015 and each of those years under the IPCC's highest-emissions situation (Table 1 & fig 9). The anticipated damage in each year from the coordinate impacts of higher temperatures

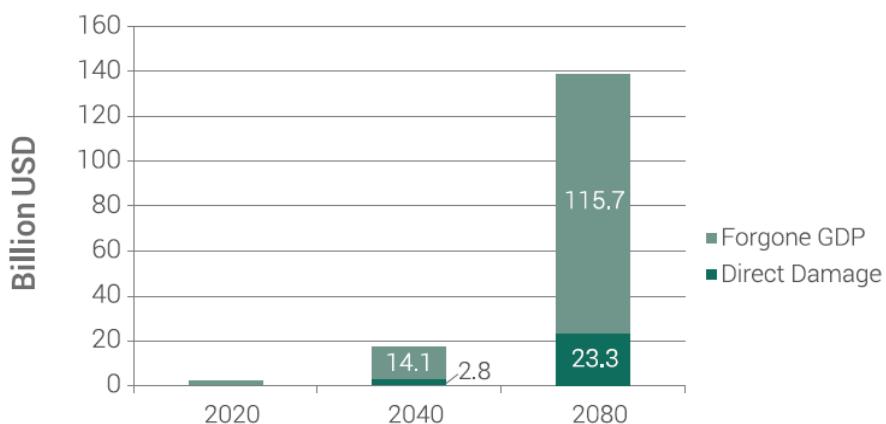
and other changes in climate on agricultural efficiency, human health, flooding, ecosystem productivity, etc. This damage would force costs on Lebanon of approximately USD 320 million in 2020, USD 2,800 million in 2040, and USD 23,200 million in 2080 (Central Administration of Statistics, 2015).

The investigation basic recognizes that, over time, these coordinate impacts would moderate the development of Lebanon's economy, measured as Gross Domestic Product (GDP). In the event that current patterns proceed, worldwide GHG outflows between 2015 and 2020 would diminish Lebanon's GDP by approximately USD 1,600 million, or 3%. This done without GDP would constitute a real cost, or reduction in financial prosperity for Lebanon's families, businesses, and government. In the event that current patterns proceed to 2040 and 2080, Lebanon would involvement reductions in GDP of USD 14,100 million (14%) in 2040, and USD 115,700 million (32%) in 2080 (Central Administration of Statistics, 2015).

The whole of the direct-damage costs and the forgone GDP breaks even with the anticipated add up to assessed costs that worldwide emissions in 2015 and past would force on Lebanon, in the event that current patterns proceed. The investigation demonstrates add up to costs of approximately USD 1,900 million in 2020, USD 16,900 million in 2040, and USD 138,900 million in 2080. These total amounts, isolated by the anticipated number of families demonstrates an average cost per family of: USD 1,500 in 2020, USD 13,100 in 2040, and USD 107,200 in 2080. In case the government's current part within the economy remains unchanged, it would bear around USD 610 million of the entire fetched in 2020, USD 5,400 million in 2040, and USD 44,300 million in 2080.

**Table 1: Potential costs in 2020, 2040, and 2080 from the cumulative effects of global GHG emissions in 2015 and subsequent years (2015 USD)**

| Potential costs   | 2020                   | 2040       | 2080        |
|---|------------------------|------------|-------------|
| Direct annual damage from drought, etc. in Lebanon (millions) | USD 320                | USD 2,800  | USD 23,200  |
| Forgone GDP in Lebanon (millions)                             | USD 1,600              | USD 14,100 | USD 115,700 |
| Percentage reduction in GDP                                   | 3%                     | 14%        | 32%         |
| Total cost to Lebanon (millions)                              | USD 1,900 <sup>a</sup> | USD 16,900 | USD 138,900 |
| Average cost per household in Lebanon                         | USD 1,500              | USD 13,100 | USD 107,200 |
| Government's share (millions)                                 | USD 610                | USD 5,400  | USD 44,300  |



**Figure 9: Potential costs to Lebanon from the cumulative effects of global GHG emissions in 2015 and subsequent years**

The direct-damage costs and diminished GDP would diminish annual salary for family units all through Lebanon. Rural households generally would involve bigger rate decreases than urban households. Cultivate family units, though, would involve to some degree smaller decreases than their rural non-farm partners, particularly those getting higher costs for their crops or livestock.

For both rural and urban households, those with higher levels of income for the most part would involvement smaller reductions.

#### **IV. RESPONDING TO A CLIMATE EMERGENCY**

Boards should needs five topics in arrange to supply strong challenge and successful oversight of their bank's approach to the recognizable proof and administration of climate chance. The Board should center on these topics to fulfill itself that the bank is overseeing its dangers viably and handling administrative desires. In doing so, the Board ought to bear in intellect the challenges recognized over and test the degree to which the bank is centered on, and tending to these challenges.

##### **a. Strategy and business Model**

To ensure long-term strength, the bank must address climate dangers inside its methodology and commerce demonstrate. This ensures a coherent approach over the corporate aspiration of the bank with regard to climate change and its trade exercises, and makes a difference to drive a reliable approach to managing dangers over all perspectives of the bank's operations. Disappointment to handle climate dangers in this way might moreover uncover the bank to critical reputation damage, if partners see that the expressed desire of the bank are not reflected in its activities. When considering its aspirations, the Board should moreover consider whether it needs the bank to be a "first mover", for case, in terms of it's advertise revelations, or the improvement of modern items and services.

##### **b. Governance and Culture**

Administration structures and the bank's culture must support risk administration and be viable in cascading the climate change methodology and chance appetite all through the firm. The bank should have a clear acceleration and decision-making system for climate dangers, counting substantial prove that

dangers are evaluated, checked, overseen and detailed at all suitable levels; which climate change-related data is affecting choices. Banks must create a guide for tending to the recognized dangers and openings. Administration structures and hazard administration must be enough resourced. The Board must appear authority in setting the motivation on climate change and the “tone from the top”.

**c. Risk management**

Climate risk must be completely coordinates into the bank’s chance administration system, from setting risk appetite, through chance distinguishing proof, to chance moderation. This will take time to attain, in specific as information accessibility and risk-modelling procedures advance, but administrators anticipate to see the bank contributing adequate effort presently and with a plan for investment to create their capabilities encourage. A clear chance appetite explanation adjusted with the commerce technique and the bank’s generally climate change methodology is basic. The bank must guarantee that it has distinguished all exposures, and is utilizing important climate risk measurements mapped onto its portfolios. A key assignment for the Board is to guarantee that it is mindful of vulnerabilities in climate chance information, and is confident that the bank incorporates a well reported arrange for overseeing those regions of instability.

It is an important instrument for understanding the scale of exposures to climate risk, and for strategic planning. The bank ought to consider a sufficiently wide run of scenarios and with adequate granularity to empower it to survey satisfactorily the dangers to assembly its chance administration goals and more extensive climate change targets. The Board should be certain that the bank has the specified capabilities and foundation to undertake thorough situation examination, which the scenarios being utilized are adequately extreme and comprehensive. The Board should challenge senior managers on whether they are sure that, under each of the scenarios utilized, the bank will have satisfactory get to monetary assets.

#### **d. Liability Risk**

Climate change raises a number of obligation dangers for banks, with market data and “greenwashing” of specific concern for administrators. To relieve the risk chance which may emerge due to disappointments in disclosure, it is key that banks give the market with adequate solid data around their material exposures to climate change in line with administrative necessities, and consider their arrangement to the Task Force on Climate-related Budgetary Disclosures (TCFD) rules. In terms of items and administrations, activity to channel financing to economical ventures gives banks with openings, e.g. in connection to green bonds, credits, contracts, and secularization items. In any case, the suggestions of climate change for conduct chance are still generally unexplored.

To protect against “greenwashing” and other related conduct risks, the bank must guarantee that for the items it offers or deals in, it has actualized a strong controls system – over valuation, displaying, bookkeeping, due constancy, product governance, suitability and disclosure. The Board ought to also take a see on the chance to the bank of future administrative activity on (mis)conduct. In doing so, it ought to be caution to dangers which emerge from information, whether in terms of its accessibility and/or quality. In specific, the current nonappearance of universally reliable item guidelines, scientific classifications and benchmarks on confirmation implies that current appraisals of green items are essentially subjective.

### **V.SUSTAINABLE DEVELOPMENT GOALS IN LEBANON**

The UN has been supporting Lebanon on its national commitments to the SDGs and Plan 2030 through the advancement of required coordination stages and arranging systems as well as pivotal automatic and sectorial support. As Lebanon

struggles to not only meet its 2030 Objectives, but support its current improvement levels, the UN has been effectively locked in on key national programs that look for to reinforce the government's capacity, channel financing to key improvement needs, and accomplice usefully with civil society and the private sector. Lebanon is competent of impressive changes nowadays if all its resources common, budgetary and, especially, human are mobilized. The SDGs are an opportunity to induce everyone around the table and re-consider the current way of doing "business as usual" to demonstrate that Lebanon, and the Lebanese, can do more, but do superior, and accomplish The Lebanon We Need.

The Economic Development Objectives are a worldwide call to activity to conclusion poverty, ensure the earth's environment and climate, and guarantee that individuals all over can appreciate peace and prosperity (figure 10). These are the objectives the UN is working on in Lebanon:



**Figure 10: United Nations Sustainable Development Goals**

Lebanon has signed several traditions, such as the Paris Agreement on climate change, and built up a few institutions devoted to the security of the environment. The country is helpless to extraordinary climate like winter floods and

expanded hot summer days. In this respect, it is anticipated that Lebanon can do more to decrease its commitment to climate change and increment the capacities of educate working with natural issues. Lebanon expanded its greenhouse gas emissions, gasses that are harmful to the environment and contribute to climate change, by about 5% every year between 1994 and 2012. It is assessed that by 2040 precipitation in Lebanon will have diminished by 10-20%. Currently, sea levels in Lebanon will rise with up to 60 cm within the another 30 a long time (Wu, Jianguo, and Tong Wu, 2012, March pp. 65-86).

## **VI.CONCLUSION**

Climate change influences our planet, our economy and our budgetary system. The rise in human action – and the ensuing carbon and other nursery gas (GHG) emanations – experienced since the mechanical transformation has already had a significant and measurable effect on our planet's climate. Researchers appraise those worldwide temperatures have risen by around 1°C since 1850, and seem surpass 4°C by the conclusion of this century on the off chance that no activity to constrain emanations is taken.

The reaction to climate chance will touch all perspectives of a bank's business strategy and operations. Banks themselves have the opportunity to send their adjust sheet and commerce exercises to fund and drive the move to a greener economy. They will too got to react to client request in connection to green items and benefit advancing client needs. The Board contains a crucial part to play in this move. Given the intensifying scrutiny from controllers and all stakeholders, effective engagement with this theme presently will empower the Board to assist drive long-term maintainable separation within the commercial center for the bank, meet partner expectations, and oversee climate dangers effectively.

Because of the economic crisis that Lebanon suffers from, it is not possible to reach practical results about the actual role of banks in the process of climate change and to deal with it before restructuring the banks, and evidence of that is that it cannot give loans to citizens in building climate change even these matters have become difficult because of the economic crisis.

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