

CLIMATE REVIEW

TSKB

Economic Research



**GREEN SWAN
PLATFORM**
A TSKB INITIATIVE

Issue No: 6
January-March 2022

Understanding Water: Governance, Management, Scarcity

**On the Way for a Solution!
Results from Turkey's First
Water Council**

**What About
Climate
Justice?
Page 11**

We support our business partner Finish's campaign and invite you to "Be a Drop in the Ocean".



The content of Climate Review was written by Onur Bülbul
under the supervision of TSKB Economic Research

About Green Swan Platform

The concept of "Green Swan", which expresses the low probability but high destructive risks related to climate, occupies the first rank globally in the agenda with the increasing effects of the climate crisis every day. Today, the climate crisis stands against us as the biggest obstacle to sustainable and inclusive development.

The industrial Development Bank of Turkey, which has been working for Turkey's economic, development and social development for 70 years, established "Green Swan Platform" in order to produce solutions to this global threat.

Aiming to bring public-private sector and NGO representatives, international organizations, academics, students and the press together, the Platform invites all stakeholders to think together and produce solutions in order to achieve "Green Economic Recovery".

About TSKB Advisory Services

While TSKB supports Turkish private sector investments with its thematic loans and innovative financing products, we continue to create added value for the business world and all of the drivers of development with our sector specific advisory services which we have been offering for 35 years. With our advisory teams consisting of financial advisors, engineers and economists, we guide the companies operating in the sectors driving the Turkish economy in its journey of transformation, development and sustainability. TSKB supports businesses to assess the risks and opportunities with data-based methods associated with environmental, social and governance (ESG) policy and to analyse the public and political expectations.

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Upcoming Events

**2nd Session of Fifteenth
meeting of the Conference of
the Parties to the Convention
on Biological Diversity
(COP 15) will be held
between 25 April - 8 May
2022 in Kunming, China**

**The 9th World Water Forum
will take place in Dakar
from 21 to 26 March 2022
under the theme "Water
Security for Peace and
Development"**

"Drop" in an ocean

Welcome to the sixth issue of our Climate Review!

For sure, a key attribute to being a development economist is to be stubborn. One really has to insist on raising awareness about development issues, which are otherwise swept under the carpet for fear of tempting the adrenalin of the markets. So, here we are, repeating what we find important for the well-being of society over and over again until we are heard! For this purpose, we strive for better research content in every report published by TSKB Economic Research. In line with this, eagle-eyed readers will note that the current issue of the Climate Review includes two new areas of sub-content. Firstly, we will look at the issue of climate justice in every issue. Secondly, we will spare time to consider international best practices, which we believe will offer inspiration.

When it comes to being stubborn, the current issue of the Climate Review is devoted to "Water", just as we had drawn attention to in March last year, in recognition of World Water Day. In fact, we published our first report about the importance of water back in 2019, with a title claiming that Water is the Next Diamond. After highlighting how we have long misunderstood the value of water as a scarce resource, this title has become something of a banner for our stakeholders.

Currently, it is fair to say that the popularity of "water" as a subject is growing – but this does not necessarily mean that the level of awareness is anywhere near sufficient. We would insist that the subject deserves a comprehensive approach – something which goes beyond the popular but narrow-minded approach that focuses only on reservoir levels. Here, we can point to three pillars which will help us enlarge the vision: water scarcity, water governance and water management.

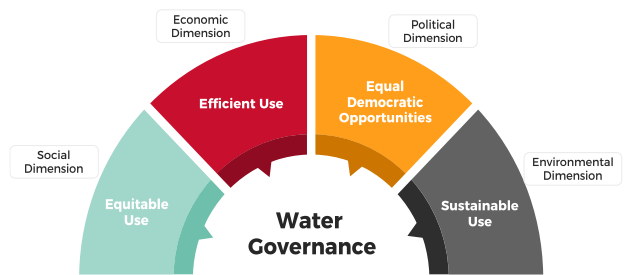
- *It is fair to start with the availability of water. According to the numbers submitted by the World Bank, 2.2 billion people around the world lack access to safe drinking water. The availability of water has direct and indirect effects in wide range of areas, such as economic and social development, health, farming, energy generation, access of economically disadvantaged girls to education and job creation.*
- *This broad framework will require better governance and detailed regulations. Indeed, the Water Council held recently should be deemed as an important step forward by Turkey. An improved legal basis will offer key leverage in turning words into actions.*
- *International cooperation is crucial in achieving improved water management. Indeed, the United Nations has issued a global call for countries to prioritize water projects in the decade of 2018-2028. Seizing this call by the UN to strengthen Turkey's international role in this area will represent a valuable step forward.*

As I have mentioned before, we are delighted to see the rising popularity of water in the agenda of the world's economic agents. We are also humbled and proud to be contributing to this trend and in raising awareness. However, we are mindful that there is a long road ahead to reach the ambitious goals, and this is something which requires broad cooperation. Hence, in support of our business partner Finish's campaign to raise water awareness, we invite you to be a proud "drop" in this ocean. Together, we can make it!

Water Governance Efforts Gain Momentum Though Still Behind 2030 Target

As the World Bank indicates in its [2021 Global Water Security and Sanitation Partnership Annual Report](#), “the climate crisis is a water crisis”, the relationship between climate change and water is only just beginning to be fully appreciated. ***In initiating and coordinating efforts to solve the water crisis and its impacts on areas such as health, agriculture, sanitation, and poverty to name but a few, Water Governance turns out to be the main umbrella of such efforts.*** Water governance refers to political, social, economic, and institutional structures, as well as overarching policies, strategies, legal, and regulatory frameworks aimed at the equitable, efficient, and sustainable use and management of water.

The Dimensions of Water Governance



Source: Water Governance Facility, TSKB Economic Research

While coordination of water governance efforts at the international level remains patchy, there is certainly a tendency in this direction. According to the [Water Governance Facility](#) Water Governance Facility, around two billion people depend on water generated from transboundary aquifers while four in every ten people meet their water needs from the world's estimated 310 transboundary river basins. However, most of these rivers lack cooperative management frameworks.

Efforts to strengthen water governance at a national level are also gaining momentum. In Turkey's case, for instance, the First Water Council Meeting held in August 2021 generated 11 working groups on topics ranging from water efficiency to water law and policy to improving water resources and agricultural irrigation. Focusing on the legal and institutional framework on water governance in Turkey, [The Working Document of Water Law and Policy Working Group](#) highlights the need for a uniform national water governance policy and a revised “Water Code” as well as harmonization with the [EU Water Framework Directive](#) and [EU Floods Directive](#). Besides these encouraging developments on water governance on both national and international levels, it is worth emphasizing that the world still has a long way to go to achieve the SDG 6 target by 2030, and accelerating governance efforts will be vital in meeting the target of “ensuring availability and sustainable management of water and sanitation for all”.

Is the EU's Carbon Border Adjustment Mechanism Becoming More Tangible? *Debate is Ongoing...*

Following the [announcement](#) of Carbon Border Adjustment Mechanism (CBAM) by the European Commission last July, European Parliament's (EP) Committee on the Environment, Public Health and Food Safety released a [draft report](#). The report, prepared by rapporteur Mohammed Chahim – a left wing law maker at the EP - includes three important divergence points from the European Commission's proposed structure for CBAM: speed, scope, and depth. The report proposes to cut the deadline for the implementation of CBAM by 7 years, bringing the deadline for implementing the financial obligations stemming from trade in goods covered by CBAM to January 2025. This deadline is proposed to be applicable for cement industry while grace periods are granted for other sectors. The rapporteur is also proposing to cut the grace period to four years from the original ten-year proposal by the Commission, thereby enabling CBAM's full implementation in January 2029.

In terms of its scope, the report proposes to include organic chemicals, plastics, and hydrogen within the products listed in CBAM. International Institute for Sustainable Development (IISD) [calculations](#) on the latest proposal indicate that the EU's imports from China could increase five-fold if the proposal is enacted with its current scope. TradeMap data on the other side, reveal that the EU

currently has an annual import figure of around 400 billion euros in goods that are proposed to be included within the scope of CBAM. This figure represents 7.2% of total EU imports which reveals the magnitude of such a scope expansion proposal. Turkish exports of these goods to the EU, on the other hand, is around 4.5 billion euros in 2021. This, in other words, doubles the coverage of Turkish exports to the EU that are subject to CBAM.

The third important point within the rapporteur's proposal is the clarification of “embedded emissions” concept and their further inclusion into “scope 2” emissions alongside scope 1 emissions. The rapporteur also defines scope 2 emissions more clearly while including “emissions generated during the production of electricity” used in manufacturing into the embedded emissions calculations within the scope of CBAM. Short time frames between the Commission's proposal (July 2021), Parliament's proposal (December 2021), and opinions received on these proposals indicate that the finalization process will be a dynamic one. Hence, EU's trading partners might face a shorter-than-expected notice as well as a wider-than-expected scope of obligations to comply with CBAM. All in all, the fact that the EU's main target is to include all sectors with carbon leakage risk into the scope of CBAM shall not be overlooked.

“Turkey Towards Green Development” – Announcing the Final Declaration of the Consultation Meeting

The final declaration of the "Turkey Towards Green Development" Consultation Meeting held in Antalya under the leadership of the Ministry of Environment, Urbanization and Climate Change was announced on February 6th. The declaration covers the overall impact of the climate crisis on Turkey under a range of aspects. Within this framework, besides several overarching issues such as the circular economy, energy and the financing aspects of the efforts to tackle the climate crisis in Turkey, the declaration sets out specific goals on several sub-headings such as the urban transformation, low emission zones, zero waste, green technology, green buildings, social housing, youth employment and mobilizing education.

Some specific targets set out in the declaration are:

- Finalizing the preparation of the Climate Law within six months and updating Turkey's 2030 National Contribution Statement by the end of the year,
- Expanding the area of urban green and protected areas from the current level of 12% to the OECD average of 17% by the end of 2023,
- Raising the recovery rate from 22.4% currently to 35% in 2023, towards the goal of achieving a 60% recovery rate by 2035 through the Zero Waste Project,
- Extending the implementation of the Deposit Management System in 81 provinces, to save 40 billion kWh of energy and 650,000 barrels of oil,
- Publishing the “Green Transformation Strategy Document in Heating” within six months to set out reintroducing waste heat produced by all thermal power plants in Turkey, which are estimated to be able to heat 4 million homes, into the system,
- Increasing the minimum energy performance from C to B in new buildings larger than 5 thousand square meters,
- Saving 25% of water used by households and strengthening social justice within this process by creating employment for 50 thousand young people in 2022.

"Turkey Towards Green Development" Consultation Meeting and its final outcomes provide important contributions to other overarching efforts in Turkey's fight against climate crisis such as the “Water Council” and the “Climate Council”.

Food Security Depends on Water Security

Fast degradation of water coupled with decreasing quantity does not only translate into the inadequacy of water itself but also raises several other red flags, and food security is one of them. Pointing to agriculture as the biggest water consuming activity, International Food Policy Research Institute (IFPRI) states that better irrigation management is key to enrich not only the quantity but also the diversity of food as well as increase the agricultural resilience to fluctuating weather conditions. As the world population is projected to hit 10 billion by 2050 and the largest increases are expected in Africa and South Asia, regions that are already experiencing food security problems, water management is becoming more important than ever.

the impacts of climate crisis on the entire water cycle presents the risk of slowing progress on water management, agricultural production, as well as food and nutrition. Hence, even projected increases in the global agricultural production until 2050 (37% in cereal production, 66% in meat, and 85% in fruits and vegetables) may not have desired positive effects on hunger and nutrition. Hence, employing management strategies to increase the efficiency of water used in irrigation could also boost the expected increase in agricultural production and bring it closer to meet the needs of increasing population by 2050. In tackling this problem, IFPRI outlines several water-related strategies, including the introduction of incentives encouraging efficient water use, education system reform to increase awareness of water, better data collection and mapping, expansion of small-scale irrigation, as well as the promotion of balanced diets for health and sustainability.



Water Management in Turkey: First Water Council



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The First Water Council was held in March 2021 following the declaration of 2021 as a “year of action” on water and irrigation investments in Turkey. With its main aim defined as designating short-, medium- and long-term strategies on water management in Turkey, the Council included eleven working groups and the Turkish Industrial Development Bank (TIDB) took part in the “Education and Awareness Studies” subgroup under the “Water Efficiency” working group. The outcomes declaration of the First Water Council was announced on October 21st, 2021, following seven months of work.

28 topics outlined in the outcome declaration include the “Water Efficiency Strategy Paper”, the preparation of “Basin Based Water Efficiency Action Plans” as well as the finalization and implementation of basin scaled management plans for 25 basins in Turkey. Some other important issues addressed by the outcome declaration include the enactment of the “Water Code” to be prepared in line with water quality legislation embedded in the European Union (EU) environmental and climate change regulations as well as the preparation and implementation of water safety plans, to cover water at all stages of its journey from the source to the final user. Furthermore, an article published by the Education and Awareness Subgroup on “strengthening climate resilience by enhancing studies on desertification, soil erosion, and soil protection” demonstrates the importance attached to the relationship between water management and climate change.

The outcome declaration also sets out specific reference to the targets of reducing water loss in drinking water systems to below 25% from the current level of around 35% as well as the introduction of special rates with an aim to positively discriminate in favour of low-income households. The declaration sets out specific reference to enhanced inter-institutional coordination and removing budgetary and infrastructural deficits to preserve the quality and quantity of underground and groundwater resources by 2022.

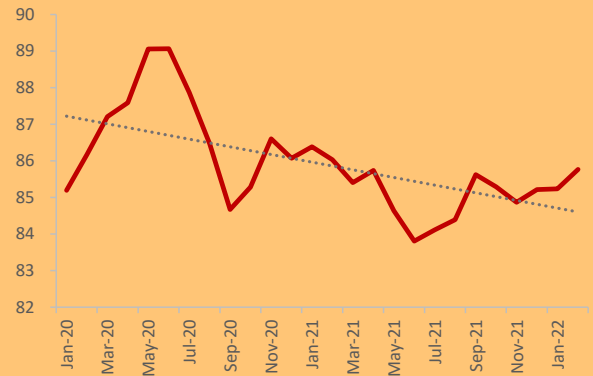
Such extensive studies and the ambitious targets regarding water in Turkey - a country facing serious risk of water stress – reveal the importance attached to water related issues. In addition to the work carried out by the Water Management Directorate General of the Turkish Ministry of Agriculture and Forestry, endeavors to meet the targets set out at the Outcome Declaration will shed light on how water management in Turkey will become more effective.

The Constantly Growing Importance of Water

The Water Index, calculated and updated by the Turkish Industrial Development Bank (TIDB) which served as a strategic advisor to the Finish brand on its campaign under the banner of “Tomorrow’s Water”, set out to increase water awareness since 2020, sums up the contemporary water outlook in Turkey. Calculated as the ratio of total agricultural, industrial and household water consumption to renewable water potential in Turkey, the “Water Index” is valued between 70 and 130 - where any value below 100 refers to a need for more cautious and effective water management.

A monthly observation of the water index since the beginning of 2020 highlights a declining trend. While the index reached its lowest point of 83.81 in June, it started to edge up from November. However, the 85.76 figure in February 2022 is still a considerably low value, indicative of more cautious water management in Turkey.

Water Index



Source: TSKB Economic Research

The “Drops Movement” is a digital initiative led by Finish that shares water-saving recommendations that can be implemented for 21 days. Individuals participating in this movement can save up to 50 tons of water per year through tasks and tips.

Make your pledge by joining us on yarininsuyu.com website and at the end of 21 days, be a 'Drop' in the ocean!

**In January
Turkey's average
temperature was
0,5°C
below the long term
January average.**

Managing Water During “Water Action Decade”

The world is off track to reach the SDGs by 2030 and action on water is not an exception. World Bank statistics indicate that around 2.2 billion people do not have safely managed drinking water services, 4.2 billion lack safely managed sanitation services, while 3 billion lack basic handwashing facilities. Global water demand on the other hand, is projected to increase by 20 to 30% by 2050 compared to 2019, due to the vital role of water in economic activities such as agriculture, manufacturing, electricity generation, as well as domestic use. Whereas water will be in more demand in the coming decades, the quality and quantity of fresh water is decreasing due to human actions. Agriculture, for instance, is responsible for 70% of all freshwater withdrawals worldwide.



Within this conundrum, water management turns out to be more vital than ever. In response to this need, the UN declared 2018-2028 period as “Water Action Decade”, aiming to address water related challenges and implementing programs and projects to manage issues such as increasing capacity for water resources management, access to safe water and sanitation, water-related disaster-risks, climate adaptation, reducing water pollution, and increasing reuse. Financing is perhaps the most important aspect of implementing such programs and projects, as an estimated amount of \$1.7 trillion is required until 2030 to achieve SDG 6, yet such amount cannot be mobilized via government funds only. Hence, enhancing cooperation among all stakeholders, public and private, as well as civil society at both national and international levels turns out to be another key aspect of water management efforts.

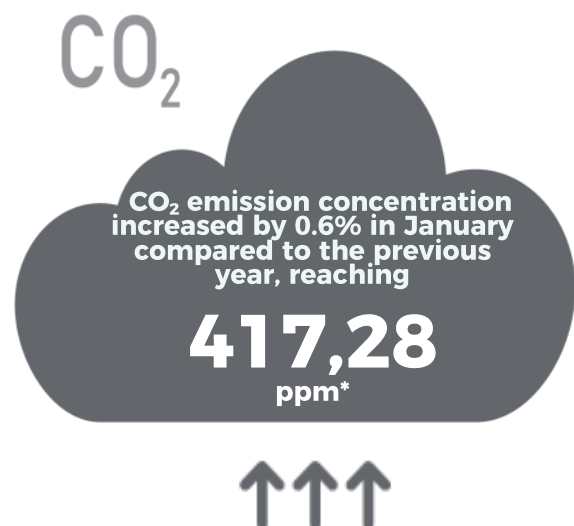
Gender Inequality: A Challenge in Access to Water as Well!

Socially defined gender roles result in women being disadvantaged in many aspects of daily life and such inequality is visible in water related daily activities as well. One of the traditional roles attributed to women (and children) – especially in areas where access to water is limited – is to find and transport water for the needs of the whole family such as drinking, cooking, sanitation, and hygiene, hence leading to a collective 200 million hours spent daily on collecting water. Accordingly, women’s lost time for education, income generation, and even leisure activities necessary for a healthy well-being transforms overall gender inequality into a vicious cycle, while women remain more vulnerable to climate crisis.

Hence, actions on empowering women, which would in turn transform the communities they live in and translate into overall social and economic development, requires generating solutions on gender-water relationship as well. A UN project covering the gender analysis of the climate-water interactions in the Democratic Republic of Congo (DRC), for instance, presents a tangible picture of gender imbalance in water related activities in the country. The project finds that, besides the role of gender inequality in many topics including education, susceptibility to climate change, or household activities, efforts to reduce gender inequality in water related issues in DRC will transpose into an overall improvement in areas such as health, education, food security, and hence strengthen the country’s overall resilience to the impacts of climate change.

Cities Impacted by Green Transformation: Zonguldak

Zonguldak, known as Turkey’s coal reserve, is at the heart of discussions about the impacts of the green agenda. While mining is firmly the driving force of Zonguldak’s productivity, the city is preparing for the ambiguities brought by the green transformation. The province is shrinking for the last 20 years due to emigration as a result of the declining mining industry. According to an article in the Dünya newspaper, the Zonguldak Chamber of Trade and Industry conveyed their wish for more central planning to address the social and economic transformation the city is going through.



*Parts per million)

Evaluating Water Resources Within a Gender Equality Perspective



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Access to clean water is not only a human right but also an integral component of sustainable development. The Climate crisis threatens access to water resources which are on a continuous decline, while also deepening existing inequalities. Statistics on how water scarcity deepens gender inequality demonstrate striking results:

- In 80% of households with a lack of adequate access to water, women and girls bear the responsibility of carrying water. Carrying water across long distances and in unsafe conditions also increases the incidence of diseases among children due to poor water quality. It also results in declining school attendance especially among girls due to time and energy spent on carrying water. A recent study found that households located in districts with direct access to water resources also exhibit higher rates of school attendance.
- Agriculture uses around 70% of freshwater resources. Furthermore, as two in every three women living in low-income countries are employed in agriculture, potential yield losses in agricultural production as a result of declining water reserves pose greater risks to women. Statistics published by the Food and Agriculture Organization (FAO) confirm this risk factor, with 2020 data highlighting wider gender disparity under moderate or severe food insecurity. Accordingly, while the ratio of women living with food security risk as a share of the global female population was 6 percentage points higher than it was for men in 2019, this ratio increased to 10% in 2020.

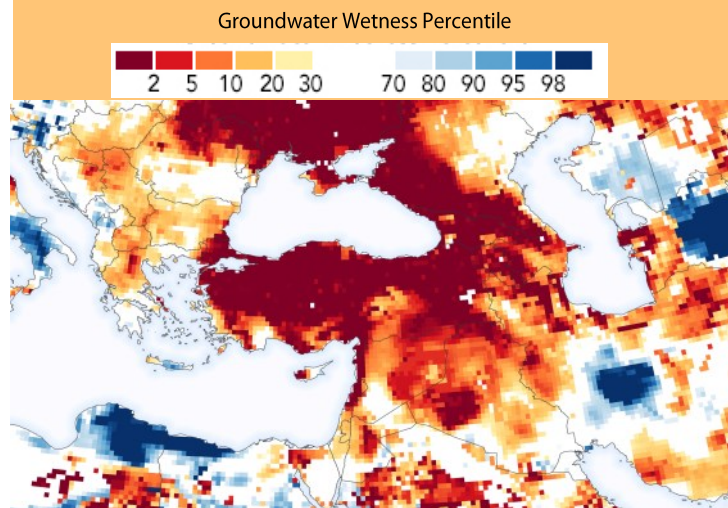
Research on the vital role of gender equality in water management suggests that efforts in water management should pay special attention to gender inequalities, as water access injustices carry the risk of further deepening gender inequality as well as exacerbating overall poverty.



NASA Images Reveal Low Level of Groundwater Storage in Turkey

Several seasons of low rainfall in Turkey have led to diminishing groundwater storage, as revealed by NASA images. Groundwater is especially important for agricultural production and the availability of drinking water and is mainly related to rates of precipitation throughout the year. The year 2020 was the driest in Turkey for five years, with overall precipitation in the October-December period of the year being 48% lower than its 1981-2010 average, translating into a risk in terms of water availability in the country. However, the Cumulative Precipitation Report of the Ministry of Environment, Urbanization and Climate Change states that the precipitation rate in Turkey between 31 October 2021 and 31 January 2022 is close to seasonal average. This means a greater amount of rain for Turkey compared to 2020. The groundwater wetness percentile shows the amount of groundwater available at a given time compared to long term records (1948-2010). Satellite images of Turkey taken in January 2021 revealed that most of the country was experiencing drought, as it takes months for groundwater levels to recover.

Groundwater Drought Indicator (January 2021)



Source: NASA Earth Observatory, TSKB Economic Research

Climate Finance

The Global Green Bond Market reaches USD 0.5tn in 2021:

Gaining Traction Day by Day

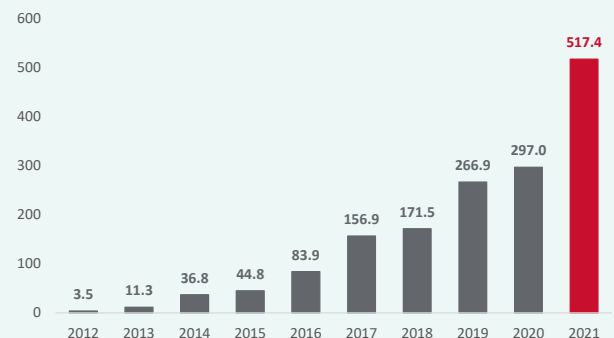
Achieving the the goal of net-zero emissions requires the mobilization of massive amounts of finance into sustainability projects. Even though we still lag behind the target of mobilizing the required capital to invest in such projects, the pace of the market expansion in green investment is breathtaking.

The Climate Bonds Initiative (CBI) database indicates that the global green bonds market had reached a record level of \$517.4 billion in 2021, marking 74% growth over 2020. This increase is in line with the general acceleration trend in the market, which had stood at a mere \$3.6 billion in 2012. The sectoral breakdown of the use of proceeds in 2021 signifies that energy investments have taken up the biggest chunk (a 35% share), followed by low carbon buildings (30%), transport (18%) and water (6%). At the country level, the U.S. was once again the leading issuer of green bonds in 2021, followed by Germany and China, whereas Europe overall leads the rest of the world in terms of the regional composition of green bonds.

Such a trend also raises hope among market players, as the CBI's market survey conducted in late October found that 25% of respondents expect annual green bond investments to surpass the \$1 trillion mark in Q4 2022 – almost twice as many as the 13% in the next group who expect this threshold to be exceeded in Q4 2023. A report published in February 2022 by S&P Global, for instance, sets out its expectation for global sustainable bond issuances – which include green bonds - to exceed \$1.5 trillion this year.

Besides the impressive pace of the growth in the market, the \$1 trillion tag still lags behind the estimated annual green investment amount of \$9 trillion needed to reach net-zero by 2050. Still, the current acceleration trend in the market indicates that global green bond issuances could reach the \$5 trillion milestone by 2025, according to the CEO of Climate Bonds, Sean Kidney.

Global Green Bond Issuances (\$ billion)



Source: Climate Bonds Initiative, TSKB Economic Research

Climate 101

EU Taxonomy: EU taxonomy is a classification system for environmentally sustainable economic activities.

Intended Nationally Determined Contributions: Non-binding actions at the national level to be taken by parties to the Paris Climate Accords towards the targets set out therein to limit global warming, including cuts in global greenhouse emissions

IPCC: The International Panel on Climate Change (IPCC) is the official UN body which assesses and issues reports on the scientific dimension of climate change

Emissions Trading System/Scheme (ETS): The Emissions Trading System is a market-based approach towards reducing greenhouse gas emissions through which governments issue market tradable permits to economic operators for each tonne of GHGs released, hence setting a limit on emissions

Geopolitical Tensions Spark Volatility in EU Carbon Prices

EU carbon prices fell by more than 16% on the first trading day of March to close at EUR 68.90. The market posted its worst day since September 2018. The weakness continued in the days that followed as prices further retreated to below EUR 60 on March 7th. The general view regarding this decline is that the conflict in Ukraine triggered a financial repositioning. Three factors have been specifically highlighted regarding the recent volatility:

1. Soaring energy prices have forced investors to liquidate carbon to cover rising margin calls on other positions
2. Rising commodities prices damaged industrial sector's cashflow and firms sold off surplus carbon permits
3. Stop-loss mechanisms triggered

EU Carbon Price (euro/tonnes)



Source: Reuters, TSKB Economic Research
(Latest Data: March 16, 2022)

Aside from these factors, the announcement by Germany that it was bringing forward its goal of the energy transition was another market mover. The country declared that it would accelerate the expansion of wind and solar power to generate almost all its electricity from renewable resources by 2035.

Carbon prices in the EU had surpassed 98 euros on February 8th and reached a new record level as current conditions rendered coal a viable option for energy generation. While current market conditions bring coal into the fold as another option, increased use of fossil fuels is expected to translate into demand for carbon permits.

Is the EU Corporate Sustainability Due Diligence Directive a Response to Corporate Greenwashing?

The [2022 Corporate Climate Responsibility Monitor](#) jointly issued by the New Climate Institute and the [Carbon Market Watch](#) assessing the climate strategies of 25 major global companies states that several global brands are not living up to their climate pledges. The self-reported global greenhouse gas (GHG) emission footprints of 25 major multinationals subject to the report added up to 5% of global GHG emissions in 2019, amounting to around 2.7 gigatons (GtCO₂e). The report argues that the aggregate emissions of the companies under the study are projected to decrease by just 40% at most, even though they claim to be net-zero (a 100% decline in aggregate emissions) by specified dates. The main reason behind this discrepancy is the lack of assessment of the carbon footprints of these companies' full value chains.



Meanwhile, the European Commission proposed a [Directive](#) on corporate sustainability due diligence on February 23rd. The proposal aims to identify, prevent, mitigate and prevent the negative impacts of corporations' operations, including their subsidiaries and value chains, on human rights and the environment. The Directive places additional restrictions on companies as well as their directors by mandating certain large companies to have business strategies in place which are compatible with the 1.5°C global warming target, and for their directors to set up and oversee due diligence processes while integrating due diligence into corporate strategies. The new rules are also expected to have an extraterritorial dimension, meaning that they will also apply to companies outside the EU which do business in the bloc.

Enjoying the Water? It May Not Last Long...

The fact that three quarters of our planet is covered with water should not be taken to mean that water is an infinite resource. On the contrary, water is scarce, as only 2.5% of water on Earth is fresh water and less than 1% of it is available to sustain all terrestrial life and eco-systems. Water is currently consumed at a rate higher than it replenishes. Global dietary habits changing with rising incomes and coupled with increasing consumption, directly or indirectly results in rising water use per person. More frequent dry seasons as well as disproportionate intensity and distribution of precipitation as a result of climate crisis, puts further burden on the ability of water to replenish. While intense rainfall carries away usable water, lakes expected to keep water dry out.

It is estimated that around 2 billion of the world's population will be living in regions with "absolute water scarcity" (meaning availability of less than 500m³ of water per year per capita) by 2025, while around two thirds of global population face the risk of living under "chronic water shortage" (availability of between 500 and 1000m³ per year per capita). UN Food and Agricultural Organization (FAO) on the other hand, sees the issue on a broader basis bringing in the demand side of scarcity into consideration on top of its supply side. According to FAO, in other words, "water scarcity" does not only refer to the physical lack of water. It includes larger dimensions such as setbacks in "access" to water due to poor management of available water resources, or scarcity as a result of water overuse, especially in agriculture. Hence, water scarcity is interpreted as a relative concept referring to an imbalance between supply and demand fluctuating due to seasonal and regional conditions.

Besides the vital role of water in terrestrial life, diminishing water supplies also cause serious economic setbacks. The World Bank, for instance, estimates that water-related losses in agriculture, health, income and prosperity could strip as much as 6% off GDP growth in some regions by 2050.

Never Waste a Crisis!

That's what the EU seems to think...

The geopolitical tension in Ukraine has compelled the EU to reconsider its energy security. The dilemma faced by the EU is the contradiction between the need to increase the use of fossil fuels as it seeks to reduce the Union's dependence on Russian energy while in the meantime meeting the requirement to step up its efforts as part of the green transformation as outlined in the European Green Deal. The EU's current approach towards this dilemma, on the other hand, indicates that the efforts to accelerate the green transformation will take precedence.

About a month ago, the European Commission proposed the inclusion of nuclear and gas into the Union's sustainable finance taxonomy as transitional energy resources. The proposal has been subject to criticism and labelled by some as "greenwashing". Such criticisms have mainly highlighted the risk of a decline in investment in renewable energy due to the potential incentives the proposal would offer the fossil fuel industry. Now, however, the EU has designated the efforts to phase out the EU's dependence on Russian energy by 2030 as a top priority. Such a target means accelerating the Union's green transformation efforts – especially in the energy sector. EU officials state that throughout this transformation process, even the increased use of coal – if required – is an option on the table.

The European Climate Law enacted in 2021 and ratified by member state legislatures sets legally binding targets for EU members to reduce greenhouse gas emissions by 35% by 2030 and to achieve net zero by 2050. The Versailles Declaration announced on March 11th, on the other hand, sets a target of reducing imports of natural gas, oil, and coal from Russia as soon as possible with an aim of limiting the EU's energy dependence. In line with this goal, the Declaration proposes further developing a hydrogen market for Europe, speeding up the development of renewables and promoting circular approaches to all manufacturing and consumption patterns within the process of improving energy efficiency. Within the framework of these goals, the Declaration also urges the European Commission to propose a joint European action for more affordable, secure, and sustainable energy (REPowerEU) by the end of May 2022.

First Climate Council is Held Between February 21st and 25th in Konya

Turkey's First Climate Council is held between February 21st and 25th in Konya, with a wide range of participation by the representatives of academia, bureaucracy, business, civil society as well as university students. The Council has been home to seven working groups on "The Reduction of Greenhouse Gas Emissions, Science and Technology, Green Financing and Carbon Pricing, Climate Adaptation, Local Administrations, Migration, as well as Just Transition and Other Social Policies." 209 university student representatives have also submitted a 50-page communique at the Council meeting with a call for a roadmap on exit from coal by 2030. In his opening speech, Minister for Environment, Urbanization and Climate Change, Murat Kurum, emphasized the aim to embed the outcomes of the seven working groups of the Climate Council into the draft "Climate Code". Minister Kurum also highlighted the importance of long-term planning on energy, agriculture, manufacturing, transportation, and construction industries as well as Turkey's goal to become an important actor on carbon pricing mechanism and climate financing. Besides the establishment of a specific working group on "Carbon Pricing Mechanism", the existence of working groups on "Just Transition" as well "Migration" and "Other Social Policies" are particularly important. The official outcomes of the First Climate Council are expected to be announced in the coming days.

Climate Justice

Among all of the topics regarding the climate crisis and the green transformation required to minimize the risks which this crisis presents, climate justice is perhaps the most overlooked – and yet, it is a central topic which requires attention. For the sake of clarity, three dimensions of the climate justice should be defined: domestic, international, and transgenerational.

Domestic dimension of climate justice mainly refers to national policies designed for the most vulnerable segment of the population to climate crisis. Among many others, these vulnerabilities may be related to climate risk level of the localities they are living in or susceptibility of the sectors they work at (that may be prone to disappear due to green transition). Examples of such policies include subsidized vocational training programs to support the transition of disadvantaged workers (those currently working in high carbon emitting industries) into emerging green industries, or benefit programs designed for those living in areas that are most prone to climate disasters. Efforts to mitigate such social inequalities stemming from the climate crisis can be seen in the [Justice40 Initiative](#) in the U.S., or the [Just Transition Mechanism](#) embedded within the European Green Deal.

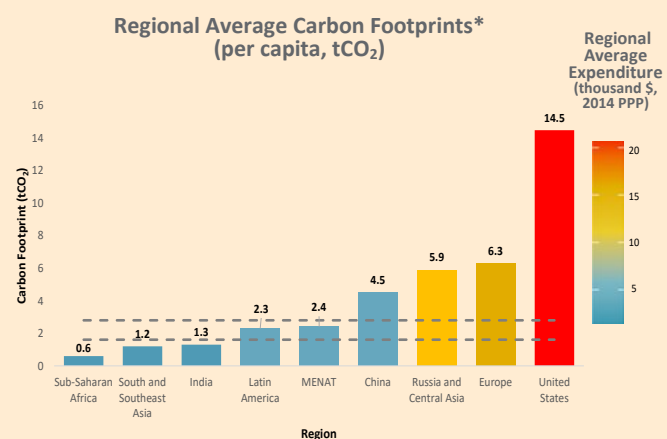
The international dimension of climate justice refers to the [discrepancies between the approaches of developing and developed countries](#) to climate issues. Such discrepancies stem from the uneven historical responsibility between developing and developed countries for the current climate crisis and appear to be at the bottom of the disappointingly slow progress in international conventions (remember the target to limit global warming to 1.5°C?). As depicted in several studies, while the contribution of the most economically and socially vulnerable segments of the global population to global emissions can be described as a mere “[rounding-error](#)”, the responsibilities their governments are asked to shoulder are “disproportionate” at the very least.

The more far reaching implications of the climate crisis projected for the future brings the transgenerational dimension of climate justice into the equation. In fact, efforts to establish [institutions](#) to monitor and provide inputs in current or future policies which may impact climate and hence the well-being of “future generations” in [several countries](#) are under way and certainly warrant further attention.

The 1% versus the 99%: Is There a Climate Impact as Well?

A [study](#) carried out by the University of Groningen and published in the “Nature Sustainability” journal on February 14th, 2022, points to the huge discrepancy between the carbon emissions of the world’s richest people and the countries and the emissions of those less fortunate. Focusing on people living in 116 countries (accounting for 87% of the world’s population), the study [highlights](#) the inequality between the rich and poor in terms of the amount of carbon emissions they generate, and hence their relative contribution to the climate crisis.

Some striking facts outlined in the study lay out that whereas someone living in sub-Saharan Africa, for instance, has an average carbon footprint of 0.6 tons of carbon dioxide (tCO₂) per year, the same figure for an average American is 14.5 tCO₂. Such inequality also exists between the world’s super rich and the rest of the population. The average carbon footprint of the richest 1% (measured according to the [World Bank’s global expenditure data](#)) is more than 75 times higher than the average carbon footprint of the poorest 50%. The study not only focuses on the carbon emissions generated by expenditure, but also calculates carbon emissions generated by entire supply chains with a specific focus on the products consumed.



Source: Bruckner et. al (2022), TSKB Economic Research

*Grey shaded line represent the target range for carbon footprints to limit climate warming to 1.5 °C or 2.0 °C

Keeping indicators such as population or energy balance constant, the study investigates the results of potential changes in the consumption patterns and carbon footprints of those living in extreme poverty (less than \$1.90 per day) and concludes that in a scenario where extreme poverty is eradicated, global carbon emissions would increase by less than 1%.

Company Highlights



Despite several alarming facts and figures related to water, there are also some glimmers of hope with encouraging developments. The solutions provided by numerous companies around the world regarding almost all aspects of the climate crisis, be it water, forests, air pollution, oceans or biodiversity should all be celebrated. In terms of water - the main theme of this issue - Xylem, a company specialized in water technology, deserves a closer look.

Xylem identifies itself as a "Water Company" with its motto "Let's Solve Water". In such efforts, the company introduces solutions in a number of areas including agriculture and irrigation, aquaculture, boats and recreational vehicles, municipal drinking water treatment and distribution, wastewater and residential solutions, among many other areas. Xylem has set itself ambitious sustainability goals for 2025 and measures its progress towards these goals by working with the Sustainability and Health Initiative for NetPositive Enterprise (SHINE) at the Massachusetts Institute of Technology (MIT) to obtain third-party validation. These goals include targets such as reducing the volume of nonrevenue water (currently over 3.5 billion m3), treating 13 billion m3 of water for reuse, preventing over 7 billion m3 of polluted water from flooding communities or entering local waterways, and providing access to clean water and sanitation solutions for at least 20 million people.

To raise awareness on issues related to water, Xylem is also in partnership with several national and international organizations, sponsors events and donates one percent of the company profits to water related causes and education. In 2022, for instance, Xylem partnered with UNESCO to sponsor the Second International Conference on Water, Megacities and Global Change, EauMega 2022, held between January 11th - 14th and aimed to produce an overview of water challenges and solutions which Megacities face and use to mitigate the effects of climate change, strengthen the dialogue between science and policy actors at a local level, and activate the cooperation platform of the Megacities Alliance for Water and Climate (MAWAC) proposed during COP21 in 2015.

As well as being awarded with an ESG rating of AAA from MSCI, and A- from CDP on its Climate Change and Water Security reports, all of these endeavors have also brought growing interest in its shares, listed on the NYSE. As of mid-February, Xylem had a market cap of around \$16.4 billion, implying a trailing price-to-earnings ratio of 38.7, much higher than sector median of 28.6, thanks to its solid long-term growth prospects. The company reported full-year 2021 revenue of \$5.2 billion and generated \$585 million in operating income.

A Ground-breaking Climate Report Gets "Lost in Translation" into Daily Life

The International Panel on Climate Change (IPCC) published its long awaited Sixth Assessment Report focused on the Impacts, Adaptation and Vulnerability Dimensions of Climate Change in 2022 with several alarming findings. The report uses a more definitive language, compared to the previous issue published in 2014, and tells humanity that climate change is in fact "an outcome of our actions" and some things are already "irreversible".

The IPCC's Sixth Assessment Report focuses on adaptation gaps concluding that as a result of the currently irreversible ramifications created by humanity, it is now imperative that we increase our climate adaptation efforts, as the current efforts will not be adequate to cope with the upcoming repercussions of climate change. The report also notes that each 0.1 degree of warming matters, as the Paris Climate Agreement limit of 1.5°C presents a very high risk of extinction for 14% of terrestrial and freshwater species.

The report also refers to inequalities between rich and poor by highlighting that between 3.3 to 3.6 billion people (mainly low income) are currently living in conditions which are highly vulnerable to climate change, while increasing human mortality due to extreme heat as well as water and food insecurity caused by climate unpredictability put billions more in life-threatening danger. The IPCC's Third Working Group's contribution to the Sixth Assessment Report on Mitigation of Climate Change is expected to be released in early April.

In January 2022,
the average
precipitation
in Turkey was

21,5

below the seasonal
normal.

In Short

Indonesia to move its capital city

The Indonesian Parliament approved a decision to move its crowded, polluted and fast sinking capital, Jakarta, to Borneo Island. The process of establishing the new capital is expected to accelerate the country's technology and innovation-based transition towards a green economy. Another priority for the country throughout this process is to create the new city within a smart and sustainable structure and in harmony with its natural environment. However, such a project also carries risks of harming the existing natural environment and wildlife.

High-Tech Transforming Every Home into a Water Recycling Center

Eco Loop, a shower technology company, introduced shower heads which filter, sterilize and make water ready for reuse in showers. This technology not only decreases water consumption by around 90%, but also reduces energy use by 80%.

Historical Decision at UNEP

175 nations signed a resolution on March 2nd at the Fifth Environment Assembly of the

United Nations Environmental Program (UNEP) held in Nairobi. The resolution establishes an Intergovernmental Negotiation Committee (ING) to agree on an internationally binding agreement on ending plastic waste in two years. The ING will start its work this year and is expected to come up with an agreement in 2024.

European Reconstruction and Development Bank (EBRD) Joins "Clean Oceans Initiative"

During the One Ocean Summit held in France, the European Reconstruction and Development Bank (EBRD) announced its inclusion into the Clean Oceans Initiative (COI) that pledges to invest \$4 billion until 2025 with the goal of reducing the volume of plastics and other pollutants in marine environments. The COI was launched in 2018 by the European Investment Bank in partnership with the Agence Française de Développement (AFD) and the KfW, Cassa Depositi e Prestiti (CDP) and the Instituto de Crédito Oficial (ICO).

China now accounts for almost half of Global Offshore Wind Capacity

According to The Economist magazine, China added 17GW of

offshore wind capacity into its electricity grid in 2021, meaning that the country now meets 26GW of electricity demand through power generated by offshore wind. As a result, China now accounts for almost half of the 54GW in globally established offshore wind energy generation capacity.

Drought in Western US may last until 2030

Extreme heat and dry weather in the in the west of the US in 2021 came to be referred to as the most severe drought in the region in the last 1,200 years. The drought resulted in the lowest soil moisture levels ever calculated in the region and is expected to last until 2030.

The Environmental, Social and Governance (ESG) Impact on Financial Rating

S&P Global announced that ESG factors impact 24% of all potential rating downgrades. Social elements within the ESG criteria remain the key factor influencing changes while the weight of the governance element is also constantly increasing.



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