CLIMATE AND SUSTAINABLE DEVELOPMENT:

RAISING AWARENESS AND SHAPING LEADERS

ESCA
BUSINESS REVIEW
#03

Casablanca Climate Leadership Forum 2024
Special Issue

SHAPING BUSINESS IN SOCIETY

TABLE OF CONTENTS

TABLE OF CONTENTS

EDITORIAL

This new publication of ESCA Business Review (EBR) follows an urgency to inform you for several reasons. The one we consider a top priority is obviously the theme. Today, nothing is more important than issues related to climate and its rapid, significant changes. We have also considered our calendar; ESCA Ecole de Management is organizing a Climate Conference from October 23 to 25, 2024, titled the "**Casablanca Climate Leadership Forum (CCLF)**." This major event is organized in partnership with several business schools from the African continent as part of the "**Business Schools for Climate Leadership Africa (BS4CL)**" initiative.

Like other crucial topics, the issue of climate change has been placed at the core of our educational activities—it is, in some way, part of our DNA. *How could we imagine shaping future leaders without embedding these concerns in their education?* Failing to do so would leave them at a disadvantage, for which we would bear responsibility. Our managers must be equipped to position companies in line with the new standards of a sustainable economy and to show the necessary agility for the required adaptations. The climate issue is of paramount importance because businesses are both a key contributor and, at the very least, have a moral obligation to prioritize it. It is largely through corporate activities that climate change has accelerated, particularly due to the unchecked emission of greenhouse gases. Whether through negligence or lack of foresight, businesses are undeniably responsible.

Today, the focus is on prevention rather than repair, as much of the damage has already been done. Think tanks worldwide, with the support of scientists, are working to develop a "road map"for the climate. In this EBR special issue, you will find the insights you need to better understand the situation and to make more informed decisions. Decision-making is impossible without reflection, and we bring together enough expertise and skills to be considered a "think tank" on topics that are vital for our decision-makers, including climate.

We engage daily on this path, which demands the highest level of discernment. Even though many of our companies are relatively young, they are just as exposed to the harmful effects of climate change as those that have been around longer and contributed more directly to the problem. This is because the issue is global in nature. We have given special attention to sectors that are particularly relevant to us as an emerging country making consistent, substantial efforts to lead in key industries such as automotive manufacturing and aeronautics—both of which are highly affected by these disruptions.

The Moroccan business community must chart the course that best suits its environment and its growth objectives. We are confident that it will rise to the challenge because it has always shown rigor, discipline, and foresight. However, the delicate question remains: *Will it be necessary to sacrifice growth and economic development for the sake of climate action?* This is a difficult question, but we are certain that our leaders will provide the most reasonable answer.

In the meantime, we invite you to explore the opinions of our experts, who will directly or indirectly contribute to the development of a climate-adapted strategy.

Enjoy this Special Issue!

Mourad Haricu

01.
EDUCATING CLIMATE LEADERS FOR AFRICA

Climate change is a real challenge for all societies, albeit with varying degrees of acuity. Africa is aware of the consequences of climate change. It is the continent that contributes least to it on a global scale and yet suffers the most. Climate change is having a growing impact on the African continent, hitting the most vulnerable and contributing to food scarcity, population displacement, insecurity, and stress on water resources.

In addition to these exogenous effects, the African continent faces its own challenges; there are many of them!

Africa must generate wealth and create more jobs to benefit from the demographic dividend. It faces rapid urbanization, which often needs to be better controlled and governed. Growing urbanization requires better housing organization, appropriate roads and transport infrastructures, and efficient, responsible waste management. Africa needs to accelerate its industrialization and transform most of its raw materials. African countries often export their goods as is, creating a low value for the country and its people.

However, this industrialization can be built differently than what has been done in economically developed countries. The last thing we want is to repeat the same mistakes with the ecological impacts we're seeing worldwide. African countries committed to industrialization should ban imports of old, polluting technologies. Similarly to some innovation processes, Africa will have to leapfrog, acquire advanced technologies, and better negotiate them to transform its raw materials into semi-finished or finished goods.

Africa has opened a new page that can contribute to its development: establishing the African Continental Free Trade Area (AfCFTA). Intra-African trade represents only 15% of the continent's total trade. This means that Africans don't talk to each other enough, don't visit each other enough, or don't trade with each other enough. It also means that intra-African mobility needs to be improved. Geopolitical tensions and even conflicts in specific regions put the security issue as the priority.

Considering these dynamics, Africa is the continent of growth and opportunities for the next century. Societies need to be supported, enlightened, and guided to strengthen their ability to be autonomous and control their own future.

African Business Schools play a significant role in their respective countries and regions on their continent. Six leading African Business Schools have decided to join forces and collaborate to bring climate issues in the African context to the forefront. They launched the Business Schools for Climate Leadership Africa (BS4CL Africa) initiative in October 2022 in Cairo, Egypt. The members of this consortium are the American University in Cairo School of Business (Egypt), ESCA Ecole de Management (Morocco), Gordon Institute of Business Science (RSA), Stellenbosch Business School (RSA), Strathmore University School of Business (Kenya), and Lagos Business School (Nigeria).

What motivates these institutions to work together on climate leadership?

Business Schools are both teaching and research institutions, and as such, they contribute significantly to new ideas within their communities, industrial audiences, and, more broadly, society.

They have understood the need to synergize the intelligence of their communities of faculty members, students, and alumni to bring ideas to limit and prevent climate impacts in diverse African contexts.

Their vocation is to collaborate as a network to conduct efficient research that can serve different industries. They also wish to serve other stakeholders, e.g.,the administration as a State Representative and the NGOs that support populations and implement actions in the field. Climate leadership must bring all development players to the table: the State representatives, companies, NGOs, funding partners, investors, local authorities, etc.

What can we expect from BS4CL Africa?

BS4CL Africa members have strong student and alumni communities. They have built up extensive networks of companies with which they interact continuously.

BS4CL Africa members have enriched their curricula by integrating major climate-related topics and the leadership approach needed to prevent causes, adapt to situations, or share best practices from the African context.

These Business Schools train entrepreneurs and leaders who are well-equipped with skills and are agents of change. They aim to contribute to a better Africa, imagine the best solutions adapted to each African context, and build development. The schools revise their programs to consider the climate change challenges and the necessity of teaching Complexity Management courses. It's a thought-provoking task, so the leaders trained in Business Schools must work with policymakers, NGOs, and the corporate world to serve our societies. From now on, Business Schools must emphasize educating climate leaders. This is the new relationship approach between African Business Schools and the corporate world.

Finally, let's keep in mind that education is a lifelong process. So, Business Schools must work with corporate networks to train Managers and Executives to integrate these issues into their analysis and decision-making processes.

Ultimately, BS4CL Africa is about more than just classic academic cooperation based on joint research and the mobility of scholars and students. It's about working with the most numerous and diverse partners to bring about change and avoid disasters caused by climate change on the continent of the future. Business Schools are responsible for bringing together their communities and the private sector, government representatives, civil society, investors, financial backers, entrepreneurs, scientists, and academics.

ESCA Ecole de Management is organizing the 2nd edition of Casablanca Climate Leadership Forum from the 23rd to the 25th of October 2024 as part of this initiative. The forum will bring together management science researchers and stakeholders on the theme "Global Challenges, Local Solutions: Adapting International Climate Strategies for Africa's Business Landscape."

Thami Ghorfi is President of ESCA Ecole de Management. Prof. Thami Ghorfi has developed expertise in management practices in Morocco and the region in entrepreneurship and change management.

Thami Ghorfi has been appointed in 2011 as a member of the Economic, Social and Environmental Council (CESE), a constitutional institution of Kingdom of Morocco. He is also member of the Higher Council for Education, Training and Scientific Research since November 2022.

Thami Ghorfi is member of the AACSB Board of Directors since July 2024.

Thami's numerous distinctions include France's Order of Academic Palms Chevalier (2017), and the Prize of Africa Economy Builders (2016 Cote d'Ivoire). He was granted Doctor honoris causa of Grenoble Ecole de Management.

02.
FORGER DES LEADERS DE DEMAIN : STRATÉGIES RH POUR LE LEADERSHIP CLIMATIQUE DANS UN MONDE EN MUTATION

Face à l'urgence du changement climatique, la responsabilité des leaders d'entreprise en matière de durabilité écologique est essentielle pour la survie des organisations. Les professionnels des ressources humaines (RH) sont cruciaux dans ce processus, en étant au cœur de l'évolution des compétences et des pratiques de leadership. Ils doivent développer des compétences en leadership climatique pour répondre aux normes environnementales strictes, aux risques climatiques accrus, et à une réglementation changeante. Cet article examine les compétences clés que les RH doivent développer chez les leaders pour une gestion proactive du changement climatique, essentielle pour tout leader efficace dans les scénarios futurs.

1. Conscience écologique et compétences techniques

Pour un leadership climatique efficace, il est crucial de former les leaders à la conscience écologique, en s'assurant qu'ils comprennent les principes scientifiques du changement climatique et ses impacts sur leur secteur. Des formations régulières et des mises à jour sur les avancées en technologies vertes sont nécessaires. Les RH peuvent utiliser des études de cas, comme l'intégration réussie de stratégies climatiques par Tesla dans l'automobile ou l'usage d'intelligence artificielle par Google pour réduire la consommation énergétique des data centers. Ces exemples illustrent comment l'innovation peut aider à atténuer les effets du changement climatique et inspirer les leaders à adopter des technologies avancées comme outils de transformation.

Ces exemples, couplés à des analyses approfondies des bénéfices économiques et environnementaux réalisés, permettront aux leaders non seulement de comprendre les impacts du changement climatique, mais aussi de visualiser les opportunités de développement durable comme des vecteurs de croissance et d'innovation.

2. Innovation et créativité pour la durabilité

Face aux défis climatiques, l'innovation devient cruciale. Les départements de ressources humaines peuvent encourager cette innovation en organisant des ateliers et des hackathons dédiés à la création de solutions durables bénéfiques pour l'entreprise et l'environnement. Ces initiatives, comme par exemple le cas des hackathons organisés par Unilever et qui ont axés sur la réduction de l'empreinte plastique, permettent aux employés de divers départements de collaborer à des projets qui combinent valeur ajoutée et réduction de l'impact environnemental. Ces événements favorisent non seulement l'innovation mais renforcent aussi l'engagement des employés envers les objectifs de durabilité de l'entreprise. En investissant dans ces formats collaboratifs, les entreprises cultivent une culture d'innovation durable, transformant les défis environnementaux en opportunités de développement stratégique et durable.

3. Capacité à influencer et à mobiliser

Dans un contexte où les enjeux climatiques sont prédominants, le leadership transcende les frontières organisationnelles, nécessitant l'aptitude à influencer et mobiliser divers acteurs : industries, politiques publiques et communautés. Les programmes de formation en RH doivent donc inclure des compétences en communication persuasive, plaidoyer, et mobilisation communautaire pour induire des changements significatifs. Prenons l'exemple de IKEA, qui a mis en place un programme de renforcement de l'influence de ses leaders à travers des séminaires réguliers avec des leaders environnementaux mondiaux, intégrant des pratiques de durabilité globales. Ces séminaires, complétés par des ateliers sur la politique environnementale, dotent les leaders des outils nécessaires pour influencer et façonner les politiques environnementales à différents niveaux.

A cet effet, l'ajout de compétences en influence et mobilisation aux programmes RH transforme les organisations en moteurs de changement environnemental. En formant leurs leaders non seulement à diriger, mais aussi à persuader et mobiliser, les RH jouent un rôle clé dans la création d'un avenir durable. Ils influencent les politiques et mobilisent les communautés vers des objectifs de durabilité globale.

Alors que ces leaders formés savent engager autour des initiatives environnementales, il est crucial qu'ils agissent avec intégrité et responsabilité. Nous examinerons ensuite comment les RH peuvent renforcer l'éthique et la responsabilité sociale, assurant que les efforts de durabilité soient bénéfiques de manière équitable et fondés moralement.

4. Éthique et responsabilité sociale

Dans le domaine du leadership climatique, les décisions ne visent pas seulement à maximiser les profits, mais portent aussi une responsabilité envers les générations futures. Ainsi, l'éthique est cruciale pour la durabilité et l'acceptation des actions environnementales.

Les professionnels des ressources humaines sont essentiels pour promouvoir une culture de responsabilité éthique. Ils doivent élaborer des codes de conduite alignés sur les valeurs de durabilité et d'intégrité, et de plus, organiser des formations régulières sur l'éthique. Ces sessions devraient inclure des discussions qui encouragent les leaders à considérer les implications à long terme de leurs décisions.

Par conséquent, promouvoir une culture de responsabilité éthique est vital pour que les initiatives de durabilité soient équitables et respectueuses des droits des communautés actuelles et futures. En effet, en plaçant l'éthique au cœur des stratégies de leadership climatique, les RH peuvent assurer que les actions sont bénéfiques sur le long terme et moralement justifiables, contribuant à un avenir plus vert et équitable.

Après avoir souligné l'importance de l'éthique et de la responsabilité sociale, il est essentiel d'examiner la capacité des leaders à répondre efficacement aux défis immédiats.

Leila Naim est consultante senior spécialisée en comportement organisationnel, développement des compétences humaines, gestion des ressources humaines et des performances individuelles et collectives. Titulaire d'un doctorat en sociologie des comportements humains en organisation, elle a également un DESS en audit de communication et un DEA en sociologie. Professeure et chercheuse à l'ESCA Ecole de Management, elle dirige le programme de Master en gestion des ressources humaines. Elle intervient régulièrement lors de conférences en Afrique et au Maroc sur des thèmes comme le leadership et la gestion du changement. Elle est également auteure et chroniqueuse dans le journal Le Matin.

5. Résilience et adaptation au changement

Dans un monde où les défis opérationnels et stratégiques évoluent rapidement, la capacité des leaders à s'adapter et à réagir de manière résiliente est cruciale. Les leaders modernes doivent être prêts à gérer des situations imprévues, comme des restructurations soudaines ou des crises de gestion qui peuvent menacer la stabilité de leur organisation.

Pour développer ces compétences, les programmes de développement du leadership doivent intégrer des méthodes interactives, telles que des simulations de crise et des jeux de rôle. Ces activités placent les leaders dans des scénarios fictifs mais réalistes, où ils doivent prendre des décisions rapides et efficaces sous pression.

L'intégration de simulations de crise et de jeux de rôle dans les programmes de développement du leadership ne contribue pas seulement à préparer les leaders à gérer les défis internes et externes; elle a également un impact significatif sur l'environnement organisationnel dans son ensemble. Ce type d'accompagnement, centré sur la résilience et l'adaptation au changement, peut transformer profondément la manière dont une entreprise perçoit et réagit aux défis environnementaux.

En cultivant une mentalité agile et proactive chez les leaders, ces formations les préparent à intégrer la durabilité et la responsabilité écologique dans leur prise de décisions. Les leaders formés à envisager les conséquences à long terme de leurs actions sont plus susceptibles d'adopter des pratiques qui minimisent l'impact environnemental de l'entreprise. Cela peut inclure l'optimisation des ressources, la réduction des déchets, l'amélioration de l'efficacité énergétique, et l'investissement dans des technologies propres.

De plus, en mettant l'accent sur la communication efficace et la gestion des crises, les leaders sont mieux équipés pour répondre aux attentes croissantes des consommateurs, des investisseurs et des régulateurs concernant la responsabilité environnementale des entreprises. Ils sont également préparés à mobiliser et à inspirer leurs équipes autour de ces objectifs, créant ainsi une culture d'entreprise où la durabilité est perçue non seulement comme une nécessité mais comme une opportunité d'innovation et de leadership sur le marché.

En somme, ce type d'accompagnement renforce les capacités des leaders à conduire des changements significatifs non seulement au sein de leur organisation mais aussi dans la façon dont celle-ci interagit avec son environnement, favorisant ainsi une approche plus intégrée et durable de la gestion des affaires. Cela contribue à positionner l'entreprise comme un acteur responsable et avant-gardiste dans la lutte contre les défis environnementaux contemporains, alignant succès commercial et respect de l'environnement.

Conclusion

Les professionnels des RH ont un rôle déterminant à jouer pour développer un leadership climatique efficace. En concentrant les efforts de formation sur ces compétences clés, ils peuvent préparer leurs leaders à naviguer et à influencer positivement le paysage complexe du changement climatique. À mesure que les défis environnementaux s'intensifient, le besoin de leaders bien préparés et responsables devient plus aigu, faisant du rôle des RH une pierre angulaire dans la lutte contre le changement climatique.

03.
THE ROAD TO SUSTAINABLE FAMILY BUSINESSES:
FAMILY VALUES AND SOCIO-EMOTIONAL WEALTH EFFECTS ON LONG-TERM SUCCESS

Family businesses are unique entities that weave together the intricate fabric of personal and professional lives. They stand out not just for their economic contributions but also for their socio-emotional wealth, which is the non-financial value they derive from family involvement. This emotional investment often shapes their decision-making processes, governance structures, and long-term strategies, making them a vital part of the global economic landscape. The interplay of these personal and professional elements creates a distinctive business model that blends family values with corporate goals, fostering a unique competitive edge and resilience, ultimately promoting sustainability.

At the heart of family businesses lies the concept of socio-emotional wealth. This refers to the emotional and social values that family members attach to their business. It includes aspects such as family control and influence, identification with the firm, emotional attachment, and the perpetuation of family legacy. These elements often drive family businesses to prioritize long-term sustainability over short-term gains, leading to business practices that are more aligned with societal well-being and ethical standards. The emphasis on socio-emotional wealth often results in a business culture that values loyalty, trust, and mutual support, which can enhance employee morale and customer loyalty, further contributing to the sustainability of the business.

The governance of family businesses is inherently different from non-family firms. Family members often hold key management positions, which can lead to unique governance challenges and opportunities. On one hand, the presence of family members in management can enhance trust and communication, fostering a cohesive work environment. On the other hand, it may also result in nepotism and resistance to change.

Azzeddine Allioui is a Faculty Member and Associate Researcher at ESCA Ecole de Management in Casablanca, Morocco. He holds a Doctorate in Management Sciences (Financial Management) and has several experiences as a consultant and professional trainer in corporate finance. He has also served as a visiting professor at several prestigious universities and business schools in Morocco.
His research primarily addresses corporate finance, with a specific focus on financial policies, investment strategies, performance, succession planning, and sustainability in family businesses. His work often explores the intersection of these financial dynamics with cultural and socio-psychological factors.
More recently, Dr. ALLIOUI has expanded his research to include innovation practices and strategies in higher education and scientific research within Morocco. This dual research focus allows him to contribute both to the fields of corporate finance and family business governance, as well as to the evolving landscape of higher education innovation in Morocco.

Effective governance in family businesses requires balancing family interests with professional management practices to ensure both business success and family harmony, which is essential for long-term sustainability. This balance often involves establishing clear governance structures and decision-making processes that respect family dynamics while promoting professional excellence.

Decision-making in family businesses is profoundly influenced by socio-emotional factors. Family owners often make decisions that preserve family control and legacy, sometimes at the expense of economic efficiency. This can lead to conservative business practices, risk aversion, and a focus on incremental growth. However, it can also result in a strong commitment to corporate social responsibility (CSR) and community engagement. Family businesses often view their social and environmental responsibilities as extensions of their family values, leading to proactive CSR initiatives and sustainable business practices. This commitment to CSR not only enhances the company's reputation but also fosters long-term relationships with stakeholders and the community, thereby promoting sustainability.

The commitment to social responsibility in family businesses is not merely a strategic choice but a reflection of their socio-emotional wealth. Family businesses are often deeply rooted in their communities and feel a strong sense of duty towards them. This sense of responsibility drives them to engage in various forms of philanthropy, environmental stewardship, and community development. By doing so, they not only enhance their reputation and brand loyalty but also contribute to the broader social good. Their engagement in social responsibility initiatives often reflects their desire to leave a positive legacy and make a meaningful impact on society, ensuring sustainability.

However, the interplay between socio-emotional wealth and business performance is complex. While the emphasis on family values and long-term sustainability can lead to stable and resilient businesses, it may also result in conflicts and challenges. Family dynamics, such as succession planning and intergenerational differences, can impact business continuity and growth. Addressing these challenges requires a nuanced understanding of both family and business dynamics, and the ability to integrate professional management with family values. This integration often involves developing strategic plans that address both business goals and family aspirations, ensuring a harmonious balance between the two and promoting sustainability.

Succession planning is a critical issue for family businesses, as the transition of leadership from one generation to the next can be fraught with challenges. Effective succession planning involves preparing the next generation for leadership roles, addressing potential conflicts, and ensuring a smooth transition. This process requires a clear succession plan, open communication, and the development of leadership skills within the family. By fostering a culture of mentorship and development, family businesses can ensure that the next generation is well-equipped to lead and sustain the business, contributing to its long-term sustainability.

Intergenerational differences can also pose significant challenges for family businesses. Differences in values, expectations, and management styles between generations can lead to conflicts and misunderstandings. Addressing these differences requires open communication, mutual respect, and a willingness to embrace change. By fostering a culture of collaboration and inclusivity, family businesses can bridge generational gaps and leverage the strengths of each generation to drive innovation and growth. This collaborative approach not only enhances business performance but also strengthens family bonds and unity, ensuring sustainability.

Family businesses also face unique challenges related to innovation and adaptation. While their emphasis on tradition and continuity can foster stability, it can also hinder innovation and adaptability. To remain competitive, family businesses must embrace change and innovation while preserving their core values. This involves fostering a culture of continuous improvement, investing in new technologies, and encouraging creative thinking. By balancing tradition with innovation, family businesses can achieve sustainable growth and remain resilient in a rapidly changing business environment, ensuring their long-term sustainability.

Finally, family businesses represent a unique blend of economic and socio-emotional value. Their emphasis on socio-emotional wealth influences their governance, decision-making, and social responsibility practices, making them distinct from non-family firms. By fostering a balance between family interests and professional management, family businesses can achieve sustainable success and contribute positively to society. The future of family businesses lies in their ability to embrace change while preserving their core values, ensuring that they remain a vital force in the global economy for generations to come. This delicate balance of tradition and innovation, personal values, and professional goals is what makes family businesses a unique and enduring pillar of the economy, promoting sustainability in all their endeavors.

04.
AFRICAN MNEs: TWO SIDES OF THE SAME COIN IN THE QUEST FOR PROFIT AND SUSTAINABLE DEVELOPMENT

There is a growing set of expectations for firms to have a positive societal impact—addressing inequality, increasing diversity, mitigating the climate crisis, and more. This is over and above their fundamental profit-making mission. Multinational enterprises (MNEs), especially in Africa, are now seen not just as economic engines but as institutions that must contribute to broader societal goals, particularly the Sustainable Development Goals (SDGs). As Africa continues its journey toward sustainable development, MNEs face a unique set of challenges and opportunities. On one hand, these enterprises can be seen as a threat to the environment and social fabric, contributing to deforestation, pollution, and labor exploitation. On the other hand, MNEs have immense potential to be key players in reducing carbon emissions, improving livelihoods, and achieving the SDGs.

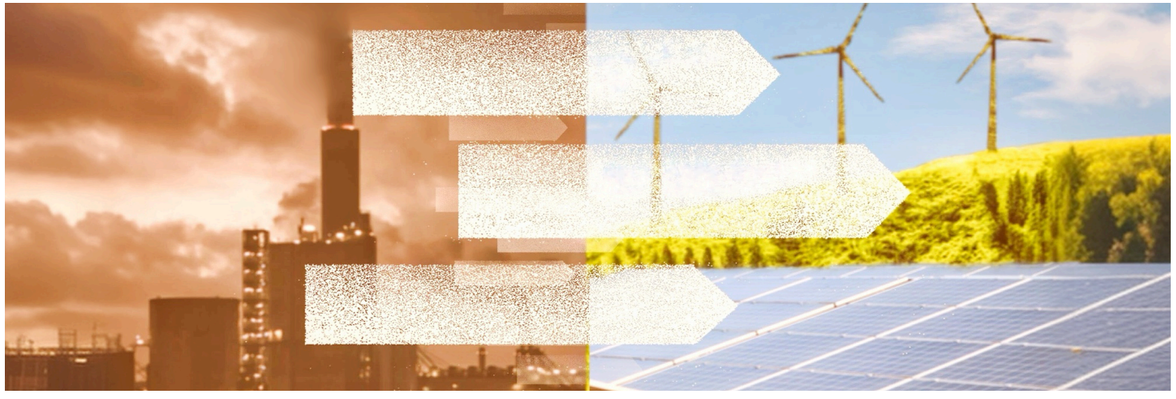
African MNEs, particularly those in sectors like energy, agriculture, and mining, have often been implicated in environmental degradation. Their operations can cause significant harm, including ecosystem destruction, pollution, and biodiversity loss. In sectors where natural resources are extracted, these companies have been linked to water contamination and deforestation, particularly in regions rich in minerals and agricultural produce. Despite these negative impacts, these MNEs are paradoxically positioned to drive sustainability solutions. Several companies have invested heavily in renewable energy projects, transitioning to wind, solar, and geothermal energy to reduce their carbon footprint. In South Africa, firms have developed extensive solar and wind farms to power their operations and reduce emissions. Egypt is also scaling its renewable energy capacity, with major solar projects being developed as part of the country's green strategy. Similarly, Kenya's leading energy provider generates most of its electricity from renewable geothermal sources and Morocco's leading fertilizer producer is integrating solar energy into its operations while simultaneously promoting more sustainable agricultural practices, such as reducing water consumption and minimizing the use of chemical inputs in farming.

However, these same MNEs have also been criticized for continuing practices that harm local ecosystems, such as deforestation, pollution from mining, and excessive water usage in industrial processes. The environmental strain caused by large-scale resource extraction, lack of robust pollution controls, and the exploitation of local labor remain significant issues tied to their operations. This dual role exemplifies the complex and often contradictory nature of MNEs in the African context: they are contributors to environmental and social problems, yet they are also essential players in crafting the solutions that are crucial for sustainable development.

At the center of global development efforts is the United Nations' SDGs, which offer a framework for tackling issues such as poverty, inequality, and climate change. These goals are a significant milestone in establishing shared global objectives, embraced by all UN member states to address economic, social, and environmental issues. MNEs across the world have largely adopted the SDGs, integrating them into their corporate strategies and demonstrating a commitment to sustainability beyond mere profit. In Africa, however, the integration of the SDGs is far from a "one size fits all" approach. The challenges here are deeply rooted in the continent's economic, social, and political complexities. While many MNEs in Africa have embraced the SDGs on paper, their ability to achieve these goals is often hampered by institutional voids, regulatory inconsistencies, and the sheer complexity of their operating environments.

A key challenge facing African MNEs is the "intention-realization gap"—the disparity between their well-intended ethical and environmental management practices and the actual outcomes of those efforts. While these companies often adopt policies that align with the SDGs, the reality of implementing them is far more complex. For instance, a company may publicly commit to reducing its carbon footprint by transitioning to renewable energy, but due to insufficient infrastructure or weak governance in the regions where they operate, these efforts can fall short. Similarly, a firm might promote stringent environmental standards across its supply chains, yet on the ground, these policies may not be consistently enforced. This can result in practices like deforestation, pollution, or exploitative labor conditions, despite the company's stated commitment to sustainability. This gap between intention and outcome illustrates the significant challenge MNEs face in aligning their sustainability ambitions with practical, effective execution in the complex environments where they operate.

This dual and sometimes contradictory behavior of African MNEs can also be explained using the attention-based view (ABV) of management. According to this theory, firms must make deliberate trade-offs in determining where to focus their resources and attention. In the context of SDGs, some goals like SDG8—Decent Work and Economic Growth offer a win-win scenario for MNEs. Investments in fair labor practices and employee well-being can lead to both social and financial benefits, as improved working conditions boost productivity, reduce turnover, and enhance corporate reputation, yielding short-term profitability gains while contributing to the local economy. On the other hand, SDG15—Life on Land**,** which focuses on halting deforestation and restoring ecosystems, often requires significant upfront investments in conservation efforts without immediate financial returns.



These actions, while essential for long-term environmental sustainability, may not provide a clear path to short-term profitability, as the economic benefits of ecosystem restoration are often indirect and realized over extended periods. As a result, MNEs are sometimes forced to choose between meeting their pro-social commitments and focusing on immediate financial outcomes. This tension can lead some companies to engage in "greenwashing" or "*SDG-washing,*" where they publicly commit to sustainability goals without making meaningful changes. This approach, aimed at appeasing external pressures without compromising profits, can erode trust, particularly in African markets where transparency and accountability are critical for long-term success.

In the challenging landscape of sustainable development, meaningful stakeholder engagement is paramount. MNEs must go beyond simply communicating their intentions and actively involve stakeholders—including employees, local communities, governments, and non-governmental organizations—in the decision-making process. This approach fosters a deeper understanding of local needs, mitigates potential conflicts, and ensures that the benefits of sustainable practices are realized across the value chain. Companies that engage in genuine stakeholder dialogue are better positioned to build trust, especially in regions where they have faced criticism for environmental or social impacts. Alongside stakeholder engagement, accountability across the value chain is critical. Many MNEs operate vast networks of suppliers and subcontractors, often in regions with weak or inconsistent regulation. Ensuring these partners uphold environmental and social standards presents a significant challenge, but it is essential for achieving meaningful progress toward the SDGs. Some companies have introduced certification programs, conducted regular audits, and established long-term partnerships with suppliers to improve sustainability practices. These efforts ensure that MNEs are not merely outsourcing sustainability risks but are instead fostering responsible practices at every level of their operations.

Despite the complexities they face, African MNEs are well-positioned to lead the continent toward sustainable development. These enterprises operate at the delicate intersection of **"doing well" while "doing good,"** embodying both sides of the coin in their operations. On one side, they contribute to environmental degradation and social inequities, yet on the other, they have the capacity to drive meaningful change. Through innovations, investments in renewable energy, and ethical practices, they are addressing climate challenges while fostering economic growth. In their pursuit of profit, these companies increasingly recognize that aligning with sustainability goals—whether by reducing carbon emissions or improving labor conditions—can unlock new opportunities. The challenge, however, lies in balancing short-term financial pressures with long-term societal benefits, as they must decide where to focus their resources. Nonetheless, the potential to achieve both financial success and positive societal impact is within reach, provided they integrate sustainability into their core strategies and engage meaningfully with stakeholders. With genuine commitment and a delicate balance between ethical aspirations and business interests, African MNEs can not only thrive but also lead the continent toward a more sustainable future.

Hicham Nachit is a Lecturer and Researcher at ESCA Ecole de Management, specializing in Business Administration with a focus on Strategy & Innovation. He combines academic expertise with practical project management and research coordination, teaching courses such as Research Methodology, Digital Business Models, and Organizational Behavior. Actively involved in the Casablanca Climate Leadership Forum, part of the Business Schools for Climate Leadership Africa (BS4CL) initiative, Hicham promotes sustainable management in response to climate change. His research focuses on international business, activities of Multinational Enterprises (MNEs), and the adoption of the UN Sustainable Development Goals (SDGs), reflecting his commitment to integrating global business practices with sustainable development.

05.
DECARBONIZATION: WHY MOROCCAN COMPANIES MUST BE CONCERNED

Climate change is no longer a distant or theoretical issue. It has concrete consequences for society, economies, and businesses. In the face of this global challenge, decarbonization, meaning the reduction of dependency on fossil fuels and greenhouse gas (GHG) emissions, has become an urgent priority. For Moroccan companies, especially those exporting to the European Union (EU), this transition is now essential. The EU has taken ambitious steps to achieve carbon neutrality by 2050, imposing new regulatory obligations. However, beyond compliance, Moroccan exporters can also serve as pioneers in sustainability, leading the way for other small and medium-sized enterprises (SMEs) and non-exporting businesses in Morocco. By adopting sustainable practices, they can not only meet international demands but also inspire a broader movement towards a greener economy within Morocco itself.

Majid El Ghaib is Professor in charge of MBA programs at ESCA Ecole de Management. He is also President of Enactus Morocco, a non-profit whose mission is to promote social progress through entrepreneurial action. Dr. El Ghaib holds a Ph.D from MIT and engineering degrees from prestigious schools in France (Ecole Centrale de Lyon & Ecole Nationale des Ponts et Chaussées). He began his professional career as a consultant for large sustainable projects in the USA and Morocco. He then served as CEO of the Moroccan National Fisheries Office, implementing sustainable projects to modernize and develop the local fishing industry. He is also the author of several academic papers and awards on sustainability and entrepreneurship.

THE STAKES FOR MOROCCAN COMPANIES

A rapidly changing global context

Since the Paris Agreement in 2015, the world has become increasingly aware of the urgency of the climate crisis. States, businesses, and even consumers are demanding concrete actions to limit global warming to 1.5°C. This global shift towards a more sustainable economy is bringing profound changes to industrial, commercial, and logistical practices.

For Moroccan companies, which are often key players in the European market, adapting to these new expectations is becoming crucial. The European Union, for example, with its **Green Deal,** aims to become the first climate-neutral continent by 2050. This agreement imposes strict rules, such as the Emission Trading System (ETS), which caps emissions for certain key industries and sets quotas on carbon emissions. Moroccan companies, to continue exporting to Europe, must align themselves with these new standards or face rising costs, or worse, losing access to these markets.

Impact on competitiveness

Aligning with international environmental regulations is not just about compliance; it is also a matter of long-term competitiveness. Ignoring decarbonization risks severely penalizing Moroccan companies, not only through legal sanctions but also through loss of market share. European consumers are becoming increasingly mindful of the environmental footprint of the products they buy. Choosing more environmentally responsible brands is a growing trend, and companies that fail to meet this demand could be seen as outdated or irresponsible.

On the other hand, decarbonization can become a lever for innovation and differentiation. **Carbon credits,** for instance, allow companies to offset their emissions by investing in ecological projects or purchasing emission permits. This not only helps reduce their environmental impact but also allows them to generate additional revenue by selling credits if they reduce their emissions more than expected.

Decarbonization: An opportunity to seize

Innovation at the heart of decarbonization

Decarbonization might seem like a constraint for companies that have not yet invested in sustainable technologies, but it is actually a unique opportunity to innovate. By adopting technological solutions such as solar energy, wind power, or intelligent energy management systems, Moroccan companies can not only reduce their carbon emissions but also improve their productivity. For example, some Moroccan companies in the construction and textile industries have already invested in renewable solutions to lower their energy consumption while remaining competitive in international markets.

Moreover, as leaders in sustainability, these exporting companies can set an example for other Moroccan SMEs and non-exporting businesses. By demonstrating that investing in sustainability can lead to cost savings and increased competitiveness, they can inspire other sectors to follow suit, fostering a broader shift towards sustainability in the Moroccan economy.

Opportunities for green financing are also multiplying, with dedicated funds like **Green Bonds** offering companies the means to finance their energy transition. These funds, in addition to easing the initial costs associated with investing in sustainable technologies, also help strengthen the brand image of companies. Indeed, foreign investors are increasingly inclined to support projects with a positive environmental impact, as green finance becomes a global trend that cannot be ignored.

Meeting market expectations

Demand for sustainable products and services is growing at an unprecedented rate, especially in Europe. Moroccan companies that take steps to improve their sustainability can access these new market segments and stand out from the competition. By meeting the ecological requirements of their commercial partners and customers, these companies not only strengthen their credibility but also open the door to new business opportunities.

International trade is also becoming increasingly sensitive to these issues. Initiatives such as the **Carbon Border Adjustment Mechanism** (CBAM) of the EU are being introduced to tax products based on their carbon footprint. This means that Moroccan companies that do not align their production with international standards could be at a disadvantage compared to greener competitors.

HOW CAN MOROCCAN COMPANIES ADAPT?

Step 1: Evaluate carbon emissions

The first essential step for any company is to measure its GHG emissions. It is important to distinguish between different sources of emissions, whether they are direct (such as fuel combustion, for example) or indirect (related to electricity purchases or the supply chain). By conducting this evaluation, companies can better understand where the key levers are to reduce their carbon footprint.

Step 2: Develop a reduction strategy

Once companies have a clear understanding of their emissions, they can set ambitious but achievable goals to reduce them. Implementing a decarbonization strategy can involve several actions: opting for renewable energy sources, improving the energy efficiency of buildings and equipment, and rethinking waste management. This strategy should also be accompanied by a long-term commitment to integrate environmental concerns into the company's culture and operations.

Step 3: Monitor, evaluate, and communicate

Tracking progress in reducing emissions is just as crucial. Companies must establish rigorous monitoring mechanisms to assess the results achieved. This includes regularly publishing GHG emission reports, in line with recognized standards like the *Greenhouse Gas Protocol*, to ensure transparency and credibility. Moreover, these reports allow companies to build trust with their commercial partners and customers by showing that they are taking concrete steps to combat climate change.

The cost of inaction

Failure to act on decarbonization could prove extremely costly for Moroccan companies. Not only could they be penalized by taxes or trade sanctions, but they could also miss out on the financing and development opportunities offered by the transition to a green economy. In the long term, fluctuations in fossil fuel prices and the growing expectations of consumers for sustainable products could affect their profitability and viability.

Conclusion

Decarbonization is no longer an option but a necessity for Moroccan companies wishing to remain competitive internationally, particularly in Europe. By taking proactive measures to reduce their emissions, companies can not only comply with regulatory requirements but also benefit from economic opportunities and strengthen their position in increasingly sustainability-driven markets. Moreover, these exporting companies can serve as role models for other Moroccan businesses, leading the way towards a greener future. By embracing sustainability, they can influence other SMEs and non-exporting businesses to follow suit, contributing to the development of a more sustainable and resilient economy in Morocco.

1. UN. (2015). *Paris Agreement on Climate Change*. United Nations.

2. UN. (2015). *Sustainable Development Goals 2030*. United Nations.

3. European Commission. (2020). *The European Green Deal*. Brussels: European Commission.

4. European Environment Agency. (2021). *EU Emissions Trading System (ETS)*. European Commission.

5. WEF. (2021). *Global Consumers' Demand for Sustainable Products*. World Economic Forum.

6. Kenton, W. (2021). *Carbon Credit Definition*. Investopedia.

7. Climate Bonds Initiative. (2020). *Green Bonds: Global State of the Market 2019*.

8. World Resources Institute & WBCSD. (2004). *The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard*. World Resources Institute.

06.

THE GAME-CHANGER: HOW AI IS SHAPING THE FUTURE OF INVESTMENT STRATEGIES FOR MOROCCAN ENTERPRISES TO STRENGTHEN CLIMATE RESILIENCE AND DRIVE SUSTAINABILITY

As global markets and industries grapple with the accelerating effects of climate change, one thing is increasingly clear: climate risk is now synonymous with business risk. Rising temperatures, extreme weather, and resource shortages are no longer distant concerns but present-day challenges threatening supply chains, operational efficiency, and profitability. Yet, within these pressing challenges lies a unique opportunity for transformation that forward-thinking business leaders can seize to safeguard their enterprises and drive unprecedented growth.

At the center of this transformation is **Artificial Intelligence (AI)**. For Moroccan enterprises, AI can reinvent how companies approach investment strategies, build climate resilience, and lead the charge toward a more sustainable and profitable future. CEOs and senior managers who adopt AI as a core strategic asset will not only navigate climate risks more effectively but position themselves as **pioneers of innovation and sustainability.**

The Climate Crisis: Turning Risk into Opportunity

Moroccan enterprises are no strangers to the impacts of climate change. Industries such as agriculture, energy, and tourism face growing threats from rising temperatures and shifting weather patterns, which jeopardize profitability and business continuity. However, the evolving business landscape also presents fertile ground for growth.

Leaders who embrace the challenge of climate resilience can unlock new markets, enhance operational efficiency, and build lasting competitive advantages. The solution lies in AI, a technology capable of revolutionizing how businesses manage risk, allocate investments, and build sustainable, future-proof operations.

AI'S ROLE IN TRANSFORMING INVESTMENT STRATEGIES

AI is more than a buzzword or a technological tool. It is a strategic enabler, providing businesses with real-time insights, operational agility, and data-driven decision-making capabilities. By integrating AI into their investment strategies, Moroccan enterprises can capitalize on new opportunities while protecting themselves from the uncertainties of climate change.

Predictive Analytics for Climate Risk Management:

One of AI's most powerful applications lies in its predictive analytics. By processing vast amounts of data, AI models can identify climate risks such as droughts, floods, and heatwaves long before they materialize. With AI-driven forecasts, businesses can adjust their investment portfolios, reallocate resources, and implement contingency plans to mitigate potential disruptions. The ability to anticipate and respond to these risks provides a **strategic edge**. Companies that leverage AI's predictive capabilities can maintain operational stability in times of crisis while others struggle to adapt.

Optimizing Energy Efficiency and Sustainability Efforts:

Rising energy costs and stringent regulations are pushing businesses to adopt more sustainable practices. AI-powered systems offer a solution by optimizing energy consumption and reducing operational inefficiencies. For example, AI-driven smart grids can monitor and adjust energy usage in real-time, helping companies reduce costs while minimizing their carbon footprint. Beyond immediate savings, these AI-driven systems enable companies to align with **sustainability goals**, positioning them as leaders in an increasingly eco-conscious market. For decision-makers, this translates into a **win-win scenario:** financial efficiency paired with environmental responsibility.

Enhancing ESG Investments:

Sustainable investments are no longer optional they are essential. However, distinguishing between genuine ESG (Environmental, Social, and Governance) investments and greenwashing remains a challenge. AI has become an indispensable tool for investment managers, allowing them to assess ESG metrics more accurately by analyzing financial and environmental data simultaneously.Moroccan enterprises that integrate AI into their investment strategies can ensure their portfolios align with both sustainability and profitability. This not only attracts ESG-conscious investors but strengthens the company's reputation as a responsible corporate leader.

Strengthening Supply Chains Through AI-driven optimization:

Supply chain disruptions are among the most critical risks businesses face due to climate change. AI provides real-time visibility into supply chains, enabling companies to predict potential vulnerabilities and optimize logistics. By leveraging AI to track everything from weather patterns to transportation routes, businesses can reduce inefficiencies, lower emissions, and ensure smoother operations. Building resilient supply chains with the help of AI not only reduces risk exposure but enhances the company's ability to **pivot quickly** in the face of sudden disruptions, maintaining business continuity and securing customer loyalty.

STRATEGIC RECOMMENDATIONS

To maximize the potential of AI in driving climate resilience and sustainability, CEOs and senior managers must take bold, forward-thinking actions. The following strategies will help ensure success:

Prioritize AI as a Strategic Investment:

AI is not simply a technological upgrade it is a strategic asset that can revolutionize how companies operate. CEOs should invest in AI talent and infrastructure, collaborate with tech partners, and make AI an integral part of their organization's long-term strategy. This will ensure that businesses can navigate both current and future challenges with agility and foresight.

Embrace a Data-Driven Decision-Making Culture:

AI thrives on data, and businesses must adopt a culture where decisions are guided by data analytics rather than intuition. Leaders should empower their teams to use AI-driven insights for everything from risk management to product development, ensuring the entire organization becomes more responsive and proactive.

Support Collaborative Climate Solution:

Climate resilience is a global challenge that demands collaboration. Moroccan enterprises should form partnerships with other businesses, governments, and research institutions to develop AI-driven solutions for sustainability. By working together, companies can access novel resources, expertise, and markets, positioning themselves as innovators and leaders in the climate transition.

Align AI with ESG Objectives:

AI must be integrated with a company's sustainability goals. CEOs should ensure that AI tools are designed to enhance ESG performance, helping the business meet regulatory demands and attract eco-conscious investors. This alignment between AI and sustainability will become a key differentiator in an increasingly competitive market.

Future-proof business Strategies with AI-powered Scenario Planning:

AI can provide businesses with future scenarios based on predictive data, enabling leaders to plan for various climate-related outcomes. By using AI-powered scenario planning, CEOs can ensure their businesses are prepared for the best and worst-case climate scenarios, allowing for **strategic flexibility** in an unpredictable world.

LEADING THE FUTURE WITH AI

As the world shifts toward a new era defined by climate challenges and sustainability demands, the ability to act decisively and innovate will separate the leaders from the laggards. **AI is the key to this innovation,** offering Moroccan enterprises the tools they need to thrive in a world of uncertainty.

The time to act is now... Those who embrace AI as a **strategic pillar** of their investment strategies will unlock not only climate resilience but also new **growth opportunities, profitability**, and **market leadership.** AI-powered companies will be the ones that lead Morocco into a sustainable, resilient, and prosperous future, turning climate risks into **game-changing opportunities.**

The future belongs to those who have the vision and courage to lead. By investing in AI today, Moroccan firms will secure their place as Pathfinders in the global movement toward sustainability building stronger businesses and a better world for future generations.

Hanane Allioui holds a PhD in Artificial Intelligence and serves as a professor at both Ibn Tofail University, where she is the Head of Department, and ESCA École de Management. Her research focuses on the integration of AI and Data Science in finance and management, driving innovation in areas such as financial optimization, predictive analytics, and strategic business decision-making. Dr. Allioui's work bridges academic rigor with practical insights, influencing both industry and scholarly work. Through her teaching and mentorship, she continues to shape the future of AI and business leadership.

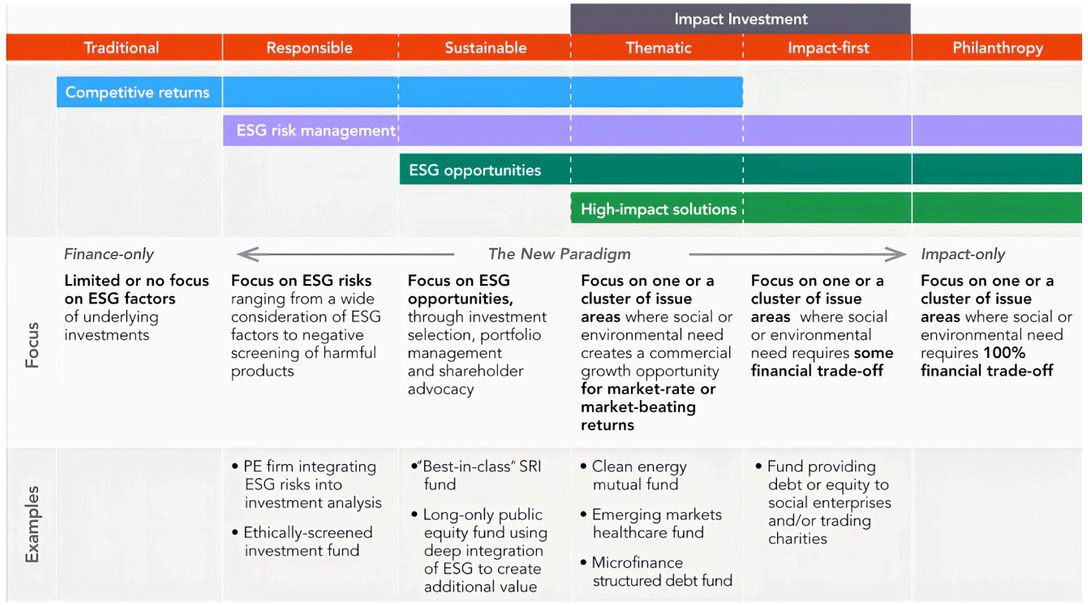
07.
SUSTAINABLE FINANCE AS A CATALYST FOR AFRICA'S INCLUSIVE DEVELOPMENT

Africa faces significant social and environmental challenges, including climate change, pollution, widespread poverty, and inequality. Achieving the Sustainable Development Goals (SDGs) by 2030 requires innovative solutions such as sustainable finance, which mobilizes capital to fund projects that drive economic development, environmental protection, and social inclusion. As these challenges intensify, a new class of financing—sustainable finance—has emerged, supported by a shifting legal and regulatory framework that now considers non-financial criteria for evaluating corporate impact. This evolving business landscape offers a favorable environment for increased investment in sustainable and inclusive development across Africa, aligning with global goals while addressing local challenges.

The investment spectrum ranging from the fully commercial investment with financial returns only to the traditional philanthropy with impact only is shown below in Fig. 1 (Ventures 2015,Novak et al. 2018). The new paradigm is the emergence of a new class of investment(Investment with impact) with its subdivisions, such as responsible, sustainable and impact investment, that bridge the gap between commercial investment and philanthropy.

Majid EL GHAIB

Figure 1: The investment continuum



With a thorough understanding of the spectrum of capital in Fig. 1, it is possible to craft various investment strategies that can help to develop and implement entrepreneurial solutions to complex social and societal issues.

Socially Responsible investing

For centuries, investing with ethical and value-based considerations has been an integral part of investing. In the 1960s, a push to end the apartheid regime in South Africa resulted in more socially aware investments. This led to the emergence of Socially Responsible Investing (SRI) in the 1980s, which involved avoiding investing in products and practices that were deemed harmful, such as tobacco and firearms. Nowadays, investors realize that factoring in environmental, social, and governance risks (ESG) when making investment decisions is crucial to protect value. As a result, numerous responsible investors have emerged, from those who 'screen out' ESG risks to those who actively work to mitigate them during their ownership (Ventures 2015).

Sustainable investing

By applying sustainability principles, investors can look beyond simply avoiding unacceptable risk and focus on creating value by backing companies that are well-positioned to thrive in a changing landscape. This approach goes beyond Responsible Investing, which typically focuses on reducing risk and protecting value, by actively seeking out ESG performance and sustainability opportunities to generate additional value through investment selection and portfolio management.

Sustainable investing is a way of considering ESG factors when making investment decisions, providing financing, or managing risk. Sustainable finance is becoming increasingly important as governments, businesses, and investors strive to meet the Paris Agreement goal of keeping global temperature rise this century well below 2 °C and reach net-zero emissions by 2050.

Sustainable finance can take many forms. It can involve financial instruments that facilitate funding for projects that reduce emissions, such as renewable energy or energy efficiency projects, or that help to restore and protect ecosystems, such as reforestation or wetland conservation.

Impact investing

The Global Impact Investing Network (GIIN) defines impact investments as "investments made into companies, organizations, and funds with the intention to generate social and environmental impact alongside a financial return." This investment approach aims to create positive, measurable social and environmental outcomes while also delivering financial returns. Impact investments are directed toward projects and companies in areas such as renewable energy, affordable housing, education, and microfinance, using capital as a tool to drive meaningful change in the world.

Impact Investing is a strategy that goes beyond traditional investments to focus on solutions to pressing social or environmental issues. Impact investors prioritize one or a cluster of issues and use their investments to make a positive impact.

Some investors seek out for-profit businesses that address social or environmental issues and offer market-rate or above-market financial returns. Others are willing to accept below-market returns to invest in social business models that reinvest their surpluses, such as trading charities, mission-driven cooperatives, and cross-subsidy models. Regardless of the financial returns, all impact investors seek to make a positive and lasting impact on society or the environment.

Impact investing is gaining popularity as more investors become aware of the potential for positive social and environmental outcomes, and the financial returns that can accompany them. For example, renewable energy projects are often attractive to impact investors because of their potential to reduce greenhouse gas emissions, while also generating a return on investment.

The impact investing market has experienced significant growth over the past 12 years, with assets under management (AUM) reaching USD 1.164 trillion in 2022, up from USD 502 billion in 2019 and USD 228 billion in 2016. Despite disruptions from the COVID-19 pandemic, impact investors are continuing to grow their AUM, and new entrants are joining the industry. This data provides a strong indication of the industry's potential to contribute to the 2030 target of achieving the SDGs, as capital allocation towards these goals remains insufficient. Impact investing is a powerful mechanism to create a more equitable, inclusive, and sustainable future.

ESG regulations as level playing field for companies

ESG regulations are key drivers in scaling business impact on society and on the environment. These regulations require companies to consider the environmental and social impact of their operations, as well as their corporate governance practices. By doing so, ESG regulations help to scale the social and environmental impact of businesses in several ways.

Firstly, ESG regulations help to create a level playing field for companies. When ESG regulations are in place, all companies are required to comply with them. This means that businesses cannot gain a competitive advantage by ignoring environmental and social issues or engaging in unethical practices. Instead, companies must compete on a level playing field, which encourages them to innovate and find new ways to create positive social and environmental impact.

Secondly, ESG regulations help to drive transparency and accountability. When companies are required to report on their environmental, social, and governance practices, they are more likely to be transparent about their impact on society and the environment. This creates a culture of accountability and encourages companies to take responsibility for their actions. By doing so, companies can more effectively identify areas where they can improve their social and environmental impact.

Thirdly, ESG regulations help to incentivize companies to adopt sustainable practices. When companies are required to consider the environmental and social impact of their operations, they are more likely to invest in sustainable technologies and practices. This can include reducing carbon emissions, increasing energy efficiency, and reducing waste. By doing so, companies can reduce their negative impact on the environment while also creating positive social impact.

In recent years, numerous global initiatives have emerged to standardize ESG data, driven by the need for transparency and comparability in sustainable investing. From the EU's regulations to frameworks like the Global Reporting Initiative (GRI) and efforts in the USA, these initiatives aim to harmonize ESG reporting across regions and sectors.

For instance, the EU has implemented various ESG regulations to promote sustainable and responsible investing as part of its broader commitment to the European Green Deal. The Corporate Sustainability Reporting Directive (CSRD) was adopted to enhance the scope and depth of ESG disclosures by requiring more detailed sustainability information from companies. This directive now applies to a broader range of companies and mandates the use of European Sustainability Reporting Standards (ESRS). The EU Carbon Border Adjustment Mechanism (CBAM), which is gradually being implemented, places a levy on carbon-intensive imports from countries with weaker climate regulations to prevent carbon leakage and promote global climate responsibility. These EU regulations aim to incentivize businesses to operate in a more sustainable and socially responsible way, while also providing investors with greater transparency and information about the ESG impacts of their investments.

In conclusion, sustainable finance is a powerful catalyst for Africa's development, offering a strategic pathway to address social and environmental challenges while advancing toward the 2030 SDGs. By leveraging responsible investing, impact investing, and ESG frameworks, Africa can unlock substantial resources for sustainable and inclusive growth. However, this transformation requires robust regulatory frameworks, investor engagement, and innovative financial instruments to scale solutions that bridge the gap between financial returns and positive societal impact. Through this alignment, Africa can foster resilience, sustainability, and prosperity for future generations.

It is with great pride that EBR presents these two insightful articles, both of which are drawn from the thesis work of two graduates from the International MBA program—a prestigious collaboration between ESCA Ecole de Management and HEC Liège. This partnership between two leading business schools has cultivated a space where students are empowered to address complex business challenges with a global perspective, while grounding their research in practical and academic rigor.

The articles you will read reflect the hard work and dedication of these graduates. Both pieces extract key findings and analyses from their thesis, demonstrating the high level of critical thinking and innovation that the International MBA program strives to foster. These articles are not just an academic achievement, but a showcase of their ability to apply advanced management theories to real-world business problems.

I invite you to explore the unique insights offered in these articles, as they represent the culmination of the students' academic journey under the supervision of Dr Majid K. EL GHAIB and their commitment to contributing to the business world.

08.
ARTIFICIAL INTELLIGENCE AND SUSTAINABLE **DEVELOPMENT:** HOW BANKS ARE POWERING THE GREEN SHIFT

Let's explain in simple terms the contributions and potential impacts of Artificial Intelligence (AI) on sustainable development in the banking sector!

As Antoine de Saint-Exupéry said, "We do not inherit the earth from our ancestors, we borrow it from our children."

Starting from this undeniable truth, sustainable development requires inevitable changes in all economic sectors, and banks are at a strategic crossroads where integrating sustainability becomes imperative for this transformation. With the rising expectations around ESG (Environmental, Social, and Governance), banks must not only respond to the demands of stakeholders, including regulators, but also adopt proactive strategies to contribute to the transition toward a more sustainable economy. This involves identifying new business opportunities and raising customer awareness of sustainability issues.

The main challenge the economic world faces is the need to strike a balance between economic growth and social interests, which are fundamentally opposed, while also considering the environmental dimension. This introduces a new paradigm when discussing sustainable development.

THE SOCIAL RESPONSIBILITY OF THE FINANCIAL ECOSYSTEM

While the financial sector might seem less concerned than the industrial sector with sustainability issues, many academic studies highlight the impact of banking activities on society. The financing activities of banking institutions involve financial and moral responsibility toward their clients. They have a significant social responsibility, incorporating social and environmental concerns into their business operations and interactions with stakeholders. This goes beyond the immediate scope of banks and exceeds simple compliance with employee rights or carbon emissions reduction; it also encompasses the entire financial value chain, including the financing of projects with a significant environmental impact. For example, the responsibility for implementing a high-carbon-impact project rests not only with the entrepreneur but also with the financier.

Thus, the banking sector plays a crucial role in the transition to a more sustainable economy. Banks have the power to direct financial flows toward projects and companies that contribute to combating climate change and protecting the environment.

The environmental impacts of banking activities can be examined in two ways: internally through organizational procedures or externally regarding the products offered to clients. While the direct environmental or social impact of banking operations is minimal compared to industrial companies, the impact of the products they offer can be significant. Therefore, banks are part of a link in the chain of financial responsibility.

It is also important to note that banks are structurally obliged to integrate sustainable development concepts into their financing activities. This provides them with a competitive advantage in terms of strategic differentiation. According to the theory of financial intermediation, banks use their deep knowledge of their clients to select and manage borrowers more effectively, maximizing the use of available financial resources. Thanks to this deep understanding of borrowers, they can position themselves as preferred intermediaries by combining social, environmental, and financial data with accounting data to assess business risks. As a result, banks are subject to the same professional ethical duties as accountants, lawyers, or doctors due to their fiduciary role.

All these observations allow us to say that sustainable development is a cross-cutting concept that affects all actors and aspects of society, including the financial system.

Karim Bessaih is an Innovation Manager @ BNP Paribas Group

Recently graduated with an MBA from HEC Liège/ESCA and an engineering background, Karim BESSAIH has over 20 years of experience in banking and digital transformation.
He began his banking career in Canada before joining theBNP Paribas Group in 2008, where he held several leadership positions in IT, innovation, and transformation. His international career within the group first unfolded in Algeria at BNP Paribas El DJAZAIR, followed by a role at the group's head office in France. He then moved to BMCI in Morocco to support the bank's digital transformation. More recently, he enriched his experience in Sweden by working with DREAMS Sustainable, an innovative subsidiary of the Group, before returning to the group's head office in France to assume his current position as Innovation Manager. The trajectory of Mr. Karim BESSAIH reflects a rich international experience and the ability to lead ambitious projects in various contexts.

AI AT THE SERVICE OF SUSTAINABILITY: A REVOLUTION FOR THE BANKING SECTOR

While sustainability initiatives already exist in the banking sector, AI is revolutionizing the landscape by offering Exceptional analytical and automation capabilities. However, most research focuses on traditional impacts, such as operational efficiency, without sufficiently addressing AI′s potential to promote sustainable development.

As a disruptive technology, AI plays a key role in this evolution, though challenges will inevitably arise regarding AI′s sustainability (algorithmic biases, carbon footprint, etc.). In the future, it will be crucial to identify and overcome these obstacles to ensure that AI technologies are not only beneficial for sustainability but also designed and implemented responsibly.

AI can mean many things, but in the context of sustainable development, we focus on three main types:

- **Machine Learning (ML):** Suitable for analytical, often quantitative, tasks, facilitating informed decision-making.
- **Generative AI (GenAI):** Enables the synthesis and generation of content, such as text, audio, and video.
- **Large Language Models (LLM):** Essential for analyzing complex and unstructured information, understanding and processing qualitative content, and human language.

Each of these technologies has direct implications for the financial system and can promote sustainable finance, support the transition to a green economy, and enhance financial inclusion. Imagine a world where every financial decision is guided by in-depth analysis of environmental and social impacts, powered by AI technologies capable of detecting sustainable opportunities and anticipating future challenges!

AI AND DATA: THE IMPERATIVE OF RESPONSIBLE ETHICS

While AI offers banks significant potential to enhance their sustainability efforts, challenges remain to ensure its most effective use. These challenges manifest in two ways: responsible and transparent, thus ethical, use; and the protection of personal data.

In this context, when we talk about AI, there is a data imperative that is reflected in the need for integrated collection of varied data from diverse sources (ERP, HR, Dark Data*, etc.), a robust management strategy capable of bringing these disparate pieces of information together into a coherent whole, advanced analysis, and a holistic approach to unlock their added value, and finally, rigorous governance with a transformation vision that catalyzes synergies within broader strategies to improve the organization's overall performance.

By breaking down data silos and using AI to extract insights, banks can transform their sustainability initiatives into a competitive advantage, while meeting stakeholder expectations beyond regulatory requirements.

Conclusion

In summary, the future of sustainability relies on a willingness to change paradigms and an audacious, seamless integration of disruptive technologies at the heart of banking decisions. By thoughtfully and visionary merging artificial intelligence with sustainability strategy, banks are not just following the trend; they are becoming pioneers of a green and inclusive revolution. This is a pivotal moment: by transforming into champions of ethical innovation, integrating sustainable practices into their DNA, banks have the power to shape the economic landscape and inspire a new era of commitment to our planet; because the future of our planet depends on the choices we make today.

Dark data refers to data collected by an organization but not analyzed or used. This includes elements like activity logs, emails, and internal documents. Due to their unexploited nature, dark data represents both an opportunity and a risk for businesses.*

09. TELECOMMUNICATIONS AND CLIMATE CHALLENGES: TOWARDS CARBON NEUTRALITY THROUGH GREEN ICT

The fight against climate change has become a global imperative: reducing greenhouse gas (GHG) emissions and slowing global warming have never been more urgent. While many industrial sectors are reinventing themselves to adapt to this ecological imperative, the telecommunications sector holds a unique position as a pillar of Information and Communication Technologies (ICT). The telecom sector faces a major paradox: responding to a growing demand for services while reducing its carbon footprint.

The sector also has a key advantage: its potential to become a central player in the transition towards a more sustainable world, particularly through the adoption of Green ICT. These technologies not only reduce the environmental impact of telecom infrastructures but also provide green solutions to other sectors.

ADOPTION OF GREEN ICT: A PATH TOWARD NET ZERO

Several global operators have set ambitious goals to reach Net Zero by 2050. Achieving this objective relies primarily on three essential pillars:

1. Optimization of the energy consumption of telecom infrastructures, particularly through the modernization of site and data center environments, the use of more efficient equipment, and the reduction of consumption at the Radio Access Network (RAN) level via Green Features.

2. Transition to renewable energy to power data centers and network infrastructures.

3. Reduction of the impact of Waste Electrical and Electronic Equipment (WEEE) through recycling and reuse programs for network and client equipment.

Green ICT offers a strategic solution to tackle these key challenges while creating economic opportunities for telecom operators. Their contribution can be viewed in two ways:

- **Green of ICT:** reducing the direct impact of ICT itself.
- **Green by ICT:** using ICT to enhance the sustainability of business processes and other sectors. Telecommunications, therefore, play a central role in providing solutions that allow other industries to reduce their carbon footprint.

El Mehdi Benaabd is Head of B2B Engineering at Orange Morocco, with over 13 years of experience in the telecom sector. He graduated in Engineering from Telecom Bretagne and completed an International MBA at ESCA, as well as a master's in management from HEC Liège. In his current role, El Mehdi leads the design of B2B solutions, collaborating closely with marketing on product development and supporting sales and presales teams in complex, tailored projects. His expertise spans ICT, security, cloud, datacenter, and IoT solutions.

OPPORTUNITIES FOR TELECOMS AS PROVIDERS OF SUSTAINABLE SOLUTIONS

Beyond internal optimization, the telecom sector positions itself as a catalyst for the ecological transition of other industries. The concept of Green by ICT is based on using telecommunications to activate sustainable solutions in other industrial sectors.

Technologies such as AI and IoT/5G are not only instrumental in reducing emissions in other sectors but they also create new business opportunities for telecom operators by offering them new growth levers.

Thanks to these emerging technologies, telecom operators are facilitating the development of smart cities, where infrastructure management (such as transport, energy, and public lighting) is optimized to minimize energy consumption. These solutions enable real-time monitoring and control of resources, thus reducing CO2 emissions and improving operational efficiency. Additionally, telecommunications enable sectors such as agriculture to use sensors and algorithms to optimize crop irrigation, thereby reducing water and energy consumption. Smart grids allow energy providers to manage distribution more efficiently, reducing losses and more easily integrating renewable energy.

Cloud computing is also an essential lever for the sustainable transformation of the telecom ecosystem. Thanks to server virtualization and resource sharing, cloud-based data centers significantly reduce energy consumption while meeting the growing demands of the digital transformation of the national economy. The cloud is a pillar of the strategic plan "Digital Morocco 2030", launched in September 2024.

CHALLENGES OF THE TELECOM ECOLOGICAL TRANSITION

Although the adoption of Green ICT is promising, the transition to a sustainable model in the telecom sector is fraught with challenges. The main challenge lies in the high initial investment required for the implementation of green technologies. Whether it is to modernize infrastructure to improve energy efficiency or to invest in sites and data centers powered by renewable energy, the initial costs are substantial, particularly for operators in emerging countries like Morocco.The Energy as a Service (EaaS) model offers an innovative solution to overcome this financial challenge by allowing investments to be staggered over time rather than requiring large CAPEX for the solarization of sites.

Furthermore, regulation in these countries remains insufficient, and legislative frameworks do not always support the rapid integration of renewable energy. For example, the integration of renewable energy in data centers has long been hindered in Morocco due to significant delays in the enactment of Law 40-19, which is necessary to authorize the self-production of renewable energy at medium voltage.

THE SUSTAINABILITY OF TELECOMS: A COLLECTIVE EFFORT

The telecommunications sector is at a critical juncture in the fight against climate change. By adopting Green ICT, it can not only reduce its own environmental impact but also catalyze the ecological transition in other sectors. National operators have a duty to lead by focusing on energy efficiency, recycling, and renewable energy, while contributing to the decarbonization of other sectors through emerging technologies.

To ensure the success of this transition, it is vital that the state assumes a catalytic role by removing regulatory barriers and supporting investments in ecological infrastructure. The infrastructure-sharing strategy between operators, orchestrated by the ANRT, the telecom sector regulator, is a model of success in this regard. It has been followed by numerous partnerships between Moroccan actors and international hyperscalers like Amazon, enabling the provision of local cloud services that contribute, among other things, to the decarbonization effort. This highlights the importance of regional and global cooperation as a key asset for sharing technologies, best practices, and pooling investments in Green ICT.

10.
THE INTERPLAY OF ECONOMIC GROWTH AND ENVIRONMENTAL SUSTAINABILITY:
INSIGHTS FOR MOROCCAN DECISION-MAKERS

Morocco, like many developing nations, faces the dual challenge of sustaining economic growth while addressing environmental degradation. As the country strives to improve its economic standing, it is also confronted with the need to reduce its carbon emissions and contribute to global efforts to mitigate climate change. The relationship between Morocco's GDP growth per capita and CO2 emissions reflects a broader trend in which economic expansion is tied to increased energy consumption, primarily from fossil fuels. To ensure long-term sustainability, Morocco must decouple economic growth from environmental harm by transitioning to greener, more sustainable practices.

ECONOMIC GROWTH AND CARBON EMISSIONS IN MOROCCO

As Morocco's GDP per capita has grown, so have its CO2 emissions. A regression analysis spanning 1990 to 2021 illustrates a strong positive relationship between economic growth and emissions, with 93% of the variation in CO2 emissions per capita explained by changes in GDP per capita. This trend reflects a familiar dynamic in developing economies: increased industrial activity, urbanization, and energy demand drive higher emissions.

This relationship poses a significant challenge for Morocco as it seeks to balance development with environmental sustainability. Without targeted intervention, the country risks exacerbating its environmental footprint while pursuing its economic goals.

STRATEGIES FOR DECOUPLING GROWTH FROM EMISSIONS

To reconcile economic growth with sustainability, Morocco must implement policies that decouple GDP growth from carbon emissions. Several strategies can help achieve this goal:

1. Energy Efficiency: Improving energy efficiency across all sectors is crucial. Energy-saving technologies and practices can help reduce energy consumption without sacrificing productivity or economic output. This can be achieved by investing in modern infrastructure, optimizing industrial processes, and encouraging energy-efficient behaviors across industries and households.

2. Renewable Energy: Morocco is already a regional leader in renewable energy with its ambitious solar and wind energy projects. The Noor Solar Complex, one of the largest solar power plants in the world, serves as a key pillar in Morocco′s strategy to increase the share of renewables in its energy mix. Expanding such initiatives can significantly reduce Morocco's dependence on fossil fuels and lower carbon emissions. Investing in renewable energy also creates jobs and stimulates innovation, contributing to sustainable economic growth.

3. Sustainable Industrial Practices: Industries are among the biggest contributors to CO2 emissions. Morocco must encourage businesses to adopt sustainable practices by incentivizing cleaner production methods, using energy-efficient machinery, and optimizing supply chains. Sustainable industrial practices also include minimizing waste and recycling, which further reduces environmental impact.

4. Green Technologies: Government incentives for businesses to adopt green technologies can accelerate Morocco's transition to a low-carbon economy. Encouraging innovation in sectors such as transportation, agriculture, and manufacturing can reduce emissions while maintaining competitiveness in global markets.

5. Strengthening Climate Policy: Morocco must align its climate policies with global standards and set ambitious emissions reduction targets. Effective carbon pricing mechanisms, such as carbon taxes or cap-and-trade systems, can help incentivize businesses to reduce emissions. Additionally, Morocco can enhance its climate adaptation strategies by investing in infrastructure that mitigates the impact of climate change, such as flood defenses and drought-resistant agriculture.

THE ROLE OF CLIMATE AND SUSTAINABLE FINANCE IN MOROCCO'S GREEN TRANSITION

To achieve the necessary scale of green transformation, Morocco must harness the power of climate finance, green finance, and sustainable finance. These financial instruments are pivotal in mobilizing the resources required to transition toward a low-carbon economy while fostering sustainable development.

1. Climate Finance: Climate finance refers to funding provided by national, international, or private entities to support activities that mitigate climate change or aid in climate adaptation. For Morocco, climate finance is essential in securing investments in large-scale renewable energy projects, sustainable agriculture, and climate-resilient infrastructure. Through programs like the Green Climate Fund, Morocco can access international funding to support its ambitious climate goals, including expanding renewable energy capacity and developing green infrastructure.

2. Green Finance: Green finance focuses on channeling funds into environmentally sustainable projects, such as energy-efficient housing, green transportation systems, and clean energy. Morocco has taken steps in this direction by issuing its first green bond in 2016 to fund renewable energy projects. By developing a more robust green finance ecosystem, Morocco can further attract investments that align with its environmental and economic goals, particularly in sectors like renewable energy and sustainable agriculture.

3. Sustainable Finance: Sustainable finance extends beyond environmental objectives and incorporates broader social and governance considerations. By integrating sustainability into financial decision-making, Morocco can encourage investments that promote not only environmental sustainability but also social equity and inclusive economic growth. Financial institutions can play a critical role by offering sustainable investment products and ensuring that sustainability is embedded in their lending practices.

4. Public-Private Partnerships: Effective use of climate and sustainable finance requires collaboration between the public and private sectors. The government can create an enabling environment by offering fiscal incentives, such as tax breaks or subsidies, to encourage private investment in green projects. Private investors, in turn, can provide the capital necessary for the development of sustainable infrastructure, contributing to both economic growth and emissions reduction.

THE ROLE OF DECISION-MAKERS IN ACHIEVING SUSTAINABLE GROWTH

Decision-makers in Morocco have a critical role in shaping policies that ensure economic growth does not come at the expense of the environment. Collaboration between the public and private sectors is essential to drive sustainable development.

1. Policymakers: Government officials must enact policies that encourage sustainability. This includes enforcing emissions regulations, providing subsidies or tax incentives for green technologies, and investing in renewable energy infrastructure. Policymakers should also prioritize sustainable urban planning and the development of energy-efficient public transportation systems to further reduce emissions.

2. Industry Leaders: Private sector engagement is key to reducing Morocco's carbon footprint. Industry leaders must commit to adopting cleaner production methods, reducing energy consumption, and minimizing waste. Companies can also set ambitious carbon neutrality targets and invest in renewable energy solutions to power their operations. Additionally, corporations must engage in transparent reporting of their environmental impacts, holding themselves accountable for their sustainability goals.

3. Educational Institutions: Schools and universities are integral to promoting a culture of sustainability. By incorporating environmental education into their curricula, they can equip the next generation of leaders with the knowledge and skills needed to address environmental challenges. Graduates of these institutions will play a vital role in advocating for and implementing sustainable practices in both the public and private sectors.

PUBLIC AWARENESS AND INTERNATIONAL COLLABORATION

Public awareness campaigns are essential to fostering sustainable consumption patterns. Educating citizens about the long-term environmental impacts of economic growth encourages them to make environmentally conscious decisions. Media, community organizations, and NGOs can all contribute to raising awareness and promoting a culture of sustainability.

International collaboration is also critical for Morocco's sustainability efforts. By partnering with global organizations and securing access to international financing, Morocco can accelerate its transition to a low-carbon economy. International partnerships can provide technical expertise, funding, and knowledge-sharing opportunities that facilitate the implementation of large-scale green projects.

A PATH TOWARD SUSTAINABLE GROWTH

The analysis of Morocco's GDP growth per capita and greenhouse gas emissions underscores the urgency of decoupling economic growth from environmental degradation. While Morocco has made significant strides in renewable energy, further efforts are needed to align economic progress with environmental sustainability. Through targeted policies that emphasize energy efficiency, renewable energy expansion, climate finance, and sustainable industrial practices, Morocco can foster economic growth without compromising the environment.

Ultimately, Morocco's ability to achieve sustainable growth hinges on its commitment to comprehensive and integrated policy measures. With the right strategies in place, Morocco can emerge as a leader in sustainable development, setting a powerful example for other African nations and emerging economies. In doing so, it will ensure that future generations inherit both a thriving economy and a healthy planet.

Saad Laraqui is the Associate Dean of Research at ESCA Ecole de Management. He spent two decades at the University of Maryland Global Campus, serving as a professor and director of continuing education and executive programs, overseeing the MBA, DBA, and various management certifications. Previously, Saad was the Director of the Youth Development Program at the OCP Foundation, where he implemented initiatives to support youth integration into Morocco′s economy through skill development and entrepreneurial training. He played a key role in establishing the Mohammed VI Polytechnic University of Benguérir and served as the Founding Dean of the Business School at the International University of Rabat. Saad′s research focuses on foreign direct investment, multinational enterprises, economic integration, sustainability, and economic development.

11.
CLIMAT ET DÉVELOPPEMENT ÉCONOMIQUE

La question du climat dépasse largement les considérations météorologiques qui l'accompagnent. Elle est devenue une problématique liée au développement économique. Plusieurs orientations ont été proposées par les décideurs chargés de promouvoir ce développement et, dans tous les cas, l'entreprise et les consommateurs sont placés au centre de ces enjeux. Nous avons tenté de faire un tri parmi les différentes politiques menées ou envisagées tout en osant quelques propositions.

Nous assistons depuis toujours à des variations plus ou moins marquées des effets du climat. Ces effets se manifestent de plus en plus par des températures et des précipitations non saisonnières. Ceci entraîne aussi une intensification de phénomènes cycloniques violents ainsi que des périodes fréquentes d'aridité et de sécheresse dans plusieurs régions. Nous avions toujours notre mot à dire, le petit commentaire météo lorsque l'été se transforme en canicule ou lorsque les

Mourad Harici est Professeur-Chercheur à l'ESCA École de Management, enseigne le droit social et la fiscalité des entreprises, en mettant l'accent sur les aspects transfrontaliers. En tant que conseil fiscal associé au sein d'un cabinet privé, sa clientèle se compose principalement de groupes multinationaux, capitalisant sur plus de vingt ans d'expérience au sein de grands cabinets internationaux. Il détient un diplôme d'études approfondies (D.E.A.) en droit des affaires de l'Université des Sciences Sociales de Toulouse, un Master en audit et contrôle de gestion de l'École Supérieure de Commerce de Toulouse, ainsi que des diplômes d'études supérieures spécialisées en audit juridique et social de l'Institut d'Administration des Entreprises de Toulouse et en fiscalité de l'École des Hautes Études Commerciales de Montréal. De plus, il est l'auteur de plusieurs articles professionnels traitant de questions fiscales et a écrit deux ouvrages : "La fiscalité internationale au service de l'entreprise" (Éditions La Croisée des Chemins, 2016) et "Les prix de transfert dans les groupes multinationaux – Comment réduire le risque fiscal" (Éditions La Croisée des Chemins, 2018).

pluies deviennent diluviennes. Nous avons même adopté, un vocabulaire adapté, « dérèglements climatiques ». Le lien avec l'activité économique a toujours été direct dans notre esprit, en termes de perturbations de notre vie quotidienne et de destructions de nos biens.

Depuis près d'un siècle, ces changements climatiques sont examinés de plus près, au-delà de considérations météorologiques. Ils sont évalués sur le long terme, à travers les effets qu'ils pourraient avoir sur notre environnement et les équilibres dont notre planète se nourrit. Il est question aussi de savoir si ces changements sont naturels où s'ils sont générés ou accentués par notre activité et nos habitudes. Nous avons utilisé les ressources que nous offre notre planète sans trop penser aux conséquences de nos actes. Les entreprises ont été très polluantes dans leur développement industriel. Elles nous ont portés vers des sommets dans le bien être et le confort mais le prix en a été exorbitant en termes de destruction de l'environnement. Elles n'ont intégré dans leurs programmes de développement que la croissance et le profit, oubliant un critère important, celui de la durabilité !

Aujourd'hui, ces mêmes entreprises semblent avoir perdu totalement leur capacité décisionnelle et doivent se soumettre à de nouvelles règles, celles du climat. Elles sont placées devant de nouvelles contraintes et restrictions qui pourraient aller jusqu'à remettre en cause leur existence. L'équation qu'elles doivent affronter est connue sous une dénomination caractéristique, « l'empreinte carbone ». Elle n'est pas simple et nous n'avons pas la prétention de la résoudre ici. Le dioxyde de carbone y est pour beaucoup mais il n'est pas le seul élément dans l'empreinte. D'autres gaz sont aussi concernés et cités et tous seraient responsables des perturbations de notre climat en raison d'une utilisation incontrôlée par les entreprises de l'énergie fossile, notamment le charbon, le gaz, le pétrole et les sables bitumeux. Les gaz à effet de serre – GES.

Faut-il continuer ou s'arrêter ?

De la réponse à cette dernière question dépend l'avenir de notre planète, tout autant que celui de nos entreprises !

Dans l'impossibilité d'apporter, pour le moment, une réponse suffisamment précise, nous allons nous contenter d'ouvrir des pistes de réflexion en prenant en considération les arguments dont la presse spécialisée s'est déjà imprégnée sans distinction. Or c'est justement cette distinction qui nous permettrait d'y voir plus clair et d'éviter des écueils irréparables.

Nous avons sélectionné plusieurs critères essentiels dont nous traiterons dans une objectivité suffisante pour ne pas transformer cet écrit en protestation ou en cri de colère !

Chacun de ces arguments fera l'objet d'un paragraphe séparé afin de réduire la confusion dans un thème qui est loin d'en manquer.

L'EFFET DE SERRE

S'il est incontestable que l'effet de serre est responsable des importants dérèglements climatiques que nous vivons, faudrait-il pour autant condamner tous les responsables sans distinction. Nous n'aurons aucun mal à identifier les grands pollueurs et les obliger à mettre en œuvre des mesures efficaces pour réduire ces effets. Nous n'allons nommer aucun responsable car cet article n'est pas une plaidoirie. Ils se reconnaîtront sans doute !

Plusieurs outils d'évaluation et de correction ont été élaborés par les scientifiques. Il reste à mettre en œuvre une méthodologie efficace pour atteindre les objectifs fixés. Il est assez aisé de déterminer l'empreinte carbone d'une entreprise et nous devons réfléchir sur les moyens qui pourraient la réduire à son « minimum vital ». Une fiscalité bien redistribuée et peu coûteuse pourrait contribuer à atteindre ces objectifs. Mais est-il vraiment souhaitable d'avancer dans cette voie jusqu'à créer un marché carbone avec plafonnement et achat de droits d'émission qui n'arrangerait que les plus puissants sans résoudre la question du climat ?

Par ailleurs, nous ne pouvons pas nous priver de nous interroger sur des décisions prises par certains États. Est-il envisageable d'abandonner certaines activités du secteur primaire et secondaire, productrices de carbone ou serait-il suffisant d'en transformer certaines opérations ? Si l'activité agricole était sacrifiée au nom du climat, les conséquences seraient incalculables, notamment en ce qui concerne l'auto-suffisance alimentaire et le sort d'une grande partie de la population qui a opté pour cette ruralité. L'abandon de l'industrie, dont la révolution a été facilitée par l'agriculture, entraînerait aussi des répercussions insoupçonnées en termes d'emploi et de développement économique.

En d'autres termes, faut-il supprimer la vie pour préserver la planète ? Cette question n'est pas anodine car nous recevons quotidiennement des informations qui incitent à la réflexion. Donner l'ordre à des agriculteurs de supprimer leur bétail et de laisser leurs terres en friche pour réduire l'empreinte carbone est excessif. Arrêter les ateliers des constructeurs automobiles et interdire les véhicules à moteurs à combustion dans un délai de cinq années seulement, pour ne produire que de l'électrique pourrait être une décision hâtive, motivée par la peur et propulsée par l'action politique.

Ces choix doivent faire l'objet de profondes réflexions avant leur mise en œuvre. À titre d'exemple, opter pour le véhicule électrique ne doit pas occulter les effets sur le climat de toutes les opérations intermédiaires d'extraction et de fabrication nécessaires à la production de batteries. N'oublions pas ce que le Professeur américain Michael Porter nous a enseigné à propos de la « chaîne de valeur » !

LE DÉVELOPPEMENT ÉCONOMIQUE

Certains dirigeants politiques occidentaux n'ont pas hésité à proposer des solutions radicales qui pourraient nous diriger vers des impasses. « Il est nécessaire de tout détruire pour reconstruire dans un nouveau monde », affirment-ils !

Qui pourrait s'opposer à ce « nouveau monde », sans usines ni fermes polluantes, sans avions dans le ciel, ni bateaux dans les océans, avec des saisons qui s'alternent harmonieusement selon notre calendrier grégorien ? Personne, si le seul critère de réflexion serait l'empreinte carbone. Mais il en serait peut-être autrement si l'on prend en considération des activités qui sont devenues indispensables. Prendre l'avion ou le bateau est pour certains aussi essentiel que se nourrir ou s'habiller.

C'est une question fondamentale qui n'a pas manqué de créer un clivage dans la pensée économique et politique. Nous assistons à une guerre larvée entre les partisans d'une solution climatique radicale qui envisage une refonte totale de notre monde et ceux qui prônent la modération et les actions graduelles avec le maintien d'activités essentielles. Le sort de notre planète dépend de cet affrontement et les citoyen(ne)s qui permettront aux uns et aux autres d'agir, par l'intermédiaire de leurs votes, ne sont pas en mesure de discerner. Ceci constitueun risque majeur !

Nous n'oublions pas d'évoquer les pays en voie de développement et émergents, notamment ceux qui observent les normes internationales en vigueur. Ils sont tous concernés par la question du climat car elle est planétaire. Le sort de leur développement économique dépendra de leur capacité à préserver leur souveraineté tout en œuvrant pour cette cause universelle. Le Maroc, à titre d'exemple, a déployé un ambitieux programme d'investissement dans le domaine de la construction automobile et aéronautique. Le « débat » sur le climat pourrait se présenter à nos frontières car ceux qui l'alimentent sont tous des partenaires du Maroc. Pourraient-ils un jour influencer notre politique de développement ? Si la réponse est affirmative, quelles seraient les conséquences économiques et sociales sur un pays en voie d'émergence ?

Ou devront-ils nous laisser atteindre un niveau de développement et une croissance économiques nécessaires au bien-être de la population ?

Cet article, nous en convenons, contient plus de questions que d'affirmations car l'action globale sur le climat est en cours et les divergences sont encore trop importantes pour que l'on puisse trouver un chemin praticable sans embûches. Il est difficile de conclure dans de telles circonstances mais rien ne nous empêche de faire des propositions.

Il est raisonnable, avant de s'engager, de faire un bilan complet des activités à forte empreinte carbone en les classant par ordre décroissant et, le cas échéant, décider une forte réduction de ces activités ou peut-être même leur suppression totale.

Sans parti pris, sachant que les bateaux de croisières, atteints de gigantisme, et les jets privés, de plus en plus nombreux sont connus pour les effets polluants néfastes de leur utilisation, leur réduction serait envisageable sans incidences sur notre vie quotidienne.

12.
EXAMINING THE CORRELATION BETWEEN ENVIRONMENTAL AND MARKET PERFORMANCES: CASE OF MOROCCAN COMPANIES

Introduction

The escalating global concern over climate change, driven the alarming concentration of greenhouse gases (GHGs) in the atmosphere. Causes are multiple, originated mainly from human activities such as the burning of fossil fuels, deforestation and intensive agriculture.The reduction of GHG emissions has become a paramount performance indicator forinvestors. Therefore, it is important to operate thorough examination of the impact of CO_2 emission reduction policies on market performance.

Indeed, the carbon footprint (CF) is a tool for calculating CO_2 emissions. It is considered as main pillar for sustainable development that aims to counter climate change. CF designs the total quantity of CO2 emissions, thus enabling an understanding of the scale of a given entity′s environmental impact (Matthews et al., 2008). The adoption of this tool has been stimulated by international initiatives such as the Kyoto Protocol, ISO 14064 standards, and the Paris Agreement, which have emphasized the need to reduce global GHG emissions. The GHG Protocol is divided into three scopes, covering direct emissions (Scope 1), indirect energy-related emissions (Scope 2), and all other indirect emissions (Scope 3). Each scope is used to categorize emissions sources and facilitate accounting (WRI, WBCSD, 2004). For companies and governments, establishing a carbon footprint is a strategic step towards identifying the main sources of emissions, implementing reduction actions, and complying with environmental regulations. It should be noted that several studies have concluded that carbon footprinting can be a levy for cost-oriented innovation and energy efficiency improvement (Carvalho et al., 2011; Kolk and Pinkse, 2007).

Anouar Hasbaoui holds a Ph D. in Finance (2016) and a master of science in Finance (2003) from University of San Antonio Texas (UTSA) as well as a Master of Public Administration from University of Saint Mary Texas(2005), and Bachelor's degree in econometrics from University Hassan II (1999). In 2005, Dr Hasbaoui has earned Certificate of Series 65 from National Association of Securities Dealers(NASD). Dr Hasbaoui focused his research on the Financial markets and financial risk management within financial institutions. In USA, Dr Hasbaoui was research assistant and lecturer for UTSA , he also worked for the city of San Antonio for the finance and budget departments in 2005. Actually, he is full time teacher at ESCA Ecole de Management.

1. RELATIONSHIP BETWEEN CO_2 EMISSIONS REDUCTION AND SHARE PRICE.

According to Trumpp and Guenther (2017), the environmental performance measured by reduction in CO2 emission, is associated with substantial corporate financial performance, consequently stock price took upward trend. The authors explained that companies engaged in sustainable practices can improve their reputation, reduce costs, and attract environment friendly investors. Similarly, other studies have suggested that companies with more transparency regarding their environmental practices tend to have higher stock market valuations (Clarkson et al. 2015). This suggests that the market rewards sustainability efforts, especially in industries where environmental concerns are dominant.

2. EMPIRICAL STUDY

This study seeks to examine the impact of companies' environmental performance, measured by their CO2 emissions, on their market performance. The choice of companies was motivated primarily by the relevance of their profile for studying the impact of environmental performance on their respective market performance. Indeed, these three companies - MARSA MAROC, HIKMA and CMT - are major players in industrial sectors traditionally considered to have a significant environmental impact in Morocco. In addition, these companies stand out for their formal communication on their environmental practices, which makes it possible to analyze in depth their sustainability performance and how it is perceived by investors in the financial market. The collected data was from the annual reports of HIKMA, MARSA MAROC, and La Compagnie Minière Touissit (CMT), covering the period from 2020 to 2023. CO2 emissions are measured in tonnes, while share prices are expressed in Moroccan dirhams (MAD) at the end of each year.

To assess the relationship between CO2 emissions and share prices, we used Pearson's correlation coefficient. This measures the strength and direction of the linear relationship between the two variables under study. In addition, we used the Fisher test after restructuring the data to complete the statistical analysis.

Statistical test/Company	HIKMA	MARSA MAROC	CMT
Person Ratio	0,857	0,810	0,696
Fisher's test	0,206		

The results of Fisher's exact test and the Chi-square test, applied to restructured data, statistically reject any significant association between the variable Reduction EmissionsCO2(which expresses the environmental performance) and VarPriceAction (Stock market performance) in our sample of 9 observations. It should be noted that these results could indicate that other factors influence share prices more than CO2 emission reductions. The findings also suggest that the relationship is more complex and requires a more elaborate model or additional data to be properly assessed. In the Moroccan context, these results can be explained by many factors: 1) performing environmentally requires technical and technological expertise which many companies do not have access, 2) companies may not be sufficiently incentivized to invest in CO2 emission reduction programs, 3) investors may not perceive these efforts as significant, they probably prioritize the financial performance and underweight the ESG strategies adopted by listed firms.

Conclusion, The analysis carried out on the sample did not reveal a statistically significant relationbetween CO_2 emissions reduction and the market performance of the companies studied in Morocco. these results show that other factors play more impactful role on stock prices. More research could be conducted to uncover the absence of correlation between environmental and market performance. In this regard, investor's behavior should be scrutinized, market movement is more impacted by investor's behavior with the presence of many heterogenous factors.

Main References:

- ADEME (Agence de l'Environnement et de la Maîtrise de l'Énergie). (2010). Guide méthodologique pour la réalisation d'un bilan d'émissions de gaz à effet de serre.

- Bureau des Ressources Génétiques (BRG). (2005). Bilan Carbone : Inventaire, Gestion et Réduction des émissions de gaz à effet de serre.

— Carvalho, A., et al. (2011). "Corporate Carbon Strategies in Europe: Findings from a Strategic Survey." Journal of Cleaner Production, 19(13-14), 1521-1530.

- Huang, Y. A., et al. (2011). "Carbon Footprint Accounting for Energy Consumption in China's Economic Sectors." Applied Energy, 88(6), 1603-1610.

— Matthews, H. S., et al. (2008). "The Importance of Carbon Footprint Estimation Boundaries." Environmental Science & Technology, 42(16), 5839-5842.

- Weidema, B. P., et al. (2008). "Carbon Footprint: A Catalyst for Life Cycle Assessment?" Journal of Industrial Ecology, 12(1), 3-6.

— Finkbeiner, M. (2009). "Carbon footprinting—opportunities and threats." International Journal of Life Cycle Assessment, 14(2), 91-94.

- Peters, G. P. (2010). "Carbon footprints and embodied carbon at multiple scales." Current Opinion in Environmental Sustainability, 2(4), 245-250.

— Puech, P., & Jaeger, M. (2011). Le Bilan Carbone : Pour réduire son empreinte climatique. Éditions DUNOD.

- Lescuyer, F., & Bréchet, T. (2006). "Le bilan carbone, un outil stratégique pour les entreprises." Gérer et Comprendre, (86), 75-87.

13.
LES PRODUITS VERTS ENTRE L'ENTHOUSIASME DES INDUSTRIES ET L'INDIFFÉRENCE DES CONSOMMATEURS:
POINT SUR LE GREENWASHING ET LES BARRIÈRES D'ADOPTION

Il est indubitable que les tendances corporatives s'orientent résolument vers l'innovation verte, en intégrant activement des solutions durables à toutes les étapes du cycle de production. Cela inclut l'utilisation de matériaux recyclés, l'intégration des énergies renouvelables, l'adoption de méthodes de production décarbonées, la conception de produits biodégradables, ainsi que la sensibilisation des consommateurs aux choix écologiques. Cette adoption généralisée des technologies propres a généré d'importants changements dans le marché en favorisant une transition vers une économie circulaire et durable, ce qui a par conséquent favorisé l'émergence de nouvelles normes et réglementations environnementales de plus en plus strictes, et n'a cessé de stimuler l'innovation dans ce secteur.

Ahmed Iraqi is a Professor at ESCA Ecole de Management. He holds a Ph.D. in international economic relations, which he completed with a PostDoc in strategic management and organizational behavior. He also obtained an MBA in strategic management and economic intelligence. He is the author of several books and scientific articles. His research interests include geoeconomics, nation branding, organizational change, and digital transformation. Additionally, Dr. Ahmed Iraqi is the founding president of the think tank CENTRIS and the humanitarian NGO APSOPAD International.

Certes, les avantages de l'économie verte sont nombreux, tant pour la préservation de l'environnement, la protection de la santé des consommateurs, l'optimisation des ressources des entreprises, que pour la stimulation de l'innovation technologique durable. Toutefois, malgré l'engagement croissant des firmes dans ce sens, une partie des consommateurs semble complètement indifférente vis-à-vis de cette transition écologique, démontrant une préférence pour les habitudes de consommation traditionnelles. Cette dichotomie entre l'engouement des entreprises et l'attitude réservée des consommateurs soulève donc des questions sur les perceptions et les obstacles psychologiques qui limitent l'intégration de ces innovations à grande échelle.

Une variété de facteurs explique cette réticence influençant le comportement des consommateurs et la perception qu'ils ont des produits verts, ce qui provoque des réactions allant de l'évitement passif des publicités à une sorte de rébellion active contre les stratégies commerciales qualifiées d'intrusives. Dans le même sens d'idée, l'essor des publicités écologiques ainsi que la prolifération des stratégies de greenwashing suscitent une méfiance grandissante chez les consommateurs. Ces derniers sont souvent sceptiques quant à l'authenticité de ces revendications écologiques maquillées, percevant parfois ces démarches comme étant des tentatives de manipulation. Ces stratégies dites d'écoblanchiment sont des pratiques marketing adoptées par certaines firmes en vue de véhiculer une image écologique, en se basant sur des affirmations exagérées, voire fausses, sur les avantages environnementaux de leurs pratiques ou produits. D'autres firmes préfèrent se focaliser sur des améliorations environnementales mineures, telles que la réduction marginale des émissions polluantes, dans le but de détourner l'attention des impacts négatifs plus significatifs de leurs activités, sans pour autant mettre en place des actions réellement durables.

Du côté des consommateurs, l'un des facteurs explicatifs de cette méfiance réside dans la résistance au changement. Une habitude bien ancrée dans le mode traditionnel de consommation est difficilement changée, et ce bien que les avantages et bienfaits éventuels des produits verts soient de plus en plus mis en avant. Cette inertie comportementale s'explique par l'attachement à la familiarité et la réticence naturelle de l'individu à sortir de sa zone de confort, amplifiée par la crainte d'un produit nouveau et inconnu.

L'obstination face aux produits verts peut être attribuée à plusieurs mécanismes de résistance, tels qu'une propension résistante qui s'apparente à du scepticisme, et une tendance individuelle à s'opposer à des formes de pression ou d'influence perçues. Cela signifie que certains consommateurs sont naturellement plus enclins à rejeter les publicités commerciales ou les incitations qu′ils considèrent comme coercitives. De même, l'état motivationnel de résistance est également un facteur interne qui pousse un consommateur à réduire la tension ressentie dans une situation de pression ou d'influence, surtout lorsque les pratiques, les logiques et les discours marchands sont perçus comme dissonants. En d'autres mots, dès lors que le consommateur est confronté à des tentatives de persuasion perçues comme incompatibles avec ses valeurs ou ses croyances, il éprouve systématiquement une motivation à rétablir son équilibre émotionnel en rejetant le produit en question.

Les manifestations de résistance prennent diverses formes, allant de l′évitement passif des publicités à une rébellion active contre les stratégies commerciales perçues comme intrusives. Ces réponses oppositionnelles sont des réactions directes à des situations de pression où les pratiques commerciales sont jugées dissonantes. Enfin, la réponse de certains consommateurs peut se manifester sous la forme d'une résistance cumulée, incluant toutes les cognitions et les émotions négatives encodées au fil du temps à propos d'épisodes de résistance antérieurs.

Chaque expérience négative avec des pressions commerciales ajoute une couche de scepticisme, rendant le consommateur encore plus résistant à de futures tentatives de persuasion. De plus, la diversité des choix et l'effet de la mondialisation ont uniformisé les préférences des consommateurs tout en les rendant plus méfiants envers les nouvelles techniques de marketing. Cette vigilance excessive découle souvent d'une réaction au sentiment de perte de liberté, ce qui pousse les consommateurs à adopter des comportements de réserve exprimant leur volonté de reprendre le contrôle sur leur autonomie décisionnelle dans un environnement commercial saturé et de plus en plus influent.

Par ailleurs, les consommateurs sont de moins en moins enclins à payer un coût supplémentaire pour les alternatives vertes, notamment les produits bio qui sont perçus comme étant excessivement chers. Cette réticence reflète une priorisation budgétaire par rapport à la qualité, remettant en question si les bénéfices des produits bio justifient leur coût onéreux par rapport aux produits conventionnels moins coûteux. De la même manière, les produits recyclés ou biodégradables sont perçus comme étant de moindre qualité et ayant une durée de vie réduite, principalement en raison de la nature des matières premières utilisées. Bien que le recyclage soit une avancée positive vers la durabilité, certains consommateurs craignent que les produits manufacturés selon des pratiques respectueuses à l'environnement ne soient pas aussi durables ou performants que ceux fabriqués à partir de matériaux vierges. Pareillement, la perception du sacrifice personnel constitue une barrière significative à l′adoption de comportements écologiques. Pour de nombreux consommateurs, choisir des produits verts peut impliquer des compromis perçus, tels qu'un confort réduit ou une moindre commodité, ce qui les dissuade d′opter pour des options écologiques, surtout lorsque les alternatives conventionnelles offrent une solution accessible, plus confortable ou plus familière.

Ces différents aspects de la résistance sont alimentés par des préjugés persistants sur l'économie verte, et montrent combien il est complexe de modifier les comportements de consommation, en particulier en ce qui concerne les produits verts, malgré leurs avantages évidents pour l'environnement et la santé.

En conclusion, bien que les produits verts représentent une voie prometteuse vers la durabilité environnementale, leur adoption généralisée est entravée par des obstacles profonds. Pour surmonter ces défis, il est impératif que les entreprises s′engagent véritablement dans des pratiques durables, tout en éduquant les consommateurs sur les véritables impacts de leurs choix. Cela nécessite également un dialogue ouvert et transparent qui renforce la confiance dans les initiatives vertes et reconnaît les préoccupations légitimes des consommateurs qui sont maitres de leurs choix.

14.
ADDRESSING FOOD SECURITY IN MOROCCO AMIDST WATER SCARCITY: STRATEGIES AND FUTURE DIRECTIONS

Morocco is currently facing a critical challenge to ensure food security amidst a severe and ongoing water scarcity crisis. The country′s water resources have been alarmingly depleted, with the filling rate of dams dropping to 23.2% in 2024, down from 31.7% the previous year. This sharp decline highlights the urgent need for effective water management strategies to sustain agriculture, the broader economy, and the livelihoods of millions of Moroccans.

Agriculture remains a cornerstone of Morocco's economy, contributing 15% to the GDP and employing 45% of the workforce. However, the sector is heavily dependent on precipitation, making it particularly vulnerable to climate variability and water shortages. With agriculture consuming approximately 80% of the country's water resources, managing this sector′s water usage is crucial for sustaining both food production and water availability.

In response to the water scarcity crisis, Morocco has been implementing strategic measures to manage its water-consuming agricultural sector, particularly focusing on essential crops like sugar and wheat. For instance, in the Gharb region, a significant shift in crop cultivation is planned to begin with the upcoming agricultural campaign. The cultivation of water-intensive crops such as rice, which requires approximately 17,400 m³/ha of water for irrigation, will be significantly reduced. Instead, the region plans to shift to crops like sugar beets, which consume considerably less water—between 6,000 and 7,000 m³/ha—while still ensuring the production of vital food items for local consumption. This strategic pivot aims to conserve water resources while maintaining the necessary food supply.

Moreover, Morocco has also seen a reduction in the cultivation of other water-intensive crops, such as watermelons. Watermelon cultivation, which was previously a major agricultural activity, particularly in regions like Zagora, has been heavily restricted due to its high water consumption. This measure, introduced in the last two agricultural campaigns, aims to conserve dwindling water resources amidst deteriorating climatic conditions .

The vulnerability of Morocco′s agriculture to water scarcity and its impact on food security is not a new concern. Decades ago, the former Minister of Agriculture "Lahbib El Malki", emphasized the importance of reducing Morocco's reliance on international markets. He advocated for the domestic production of over 70% of the nation's wheat needs, recognizing the risks associated with global market fluctuations, especially during drought seasons. This perspective is increasingly relevant today as climate change and geopolitical instability continue to threaten global food supplies. By focusing on self-sufficiency in essential crops, Morocco can better insulate itself from external shocks and secure a stable supply of food for its population.

This strategic vision aligns with Morocco's broader agricultural policies, such as the Green Morocco Plan (Plan Maroc Vert), which has been a foundation of the country's agricultural development strategy since its launch in 2008. The plan initially aimed to boost agricultural productivity and exports, with a strong emphasis on high-value crops like citrus and olives. However, in light of the ongoing water scarcity crisis, there is a growing consensus that the plan needs to be revisited and updated to prioritize sustainability and water conservation.

To address the pressing issue of water scarcity, Morocco has been actively investing in technological innovations aimed at improving water management within the agricultural sector. One of the most impactful initiatives is the National Programme of Water Savings in Irrigation (PNEEI), which has been in effect since 2007. Initially, the program targeted the modernization of irrigation systems across 550,000 hectares of agricultural land. By the end of 2023, the program had already equipped 824,000 hectares with localized irrigation systems, covering 50% of the country's irrigated land. This significant progress highlights Morocco′s commitment to reducing water consumption through more efficient irrigation techniques, such as drip irrigation .

A key component of this initiative is the widespread adoption of drip irrigation systems, which deliver water directly to the roots of plants, minimizing waste and enhancing efficiency. This method not only conserves water but also improves crop yields by ensuring that plants receive the optimal amount of water and nutrients. Looking ahead, Morocco has set an ambitious target to expand these efforts, aiming to cover one million hectares with localized irrigation systems by 2030 as part of its broader ″Generation Green 2020-2030″ strategy .This importance of efficient water use was underscored by King Mohammed VI in his address marking the 25th anniversary of his accession to the throne. He called for stricter measures to protect water resources, including the establishment of water police to enforce regulations and the promotion of drip irrigation as a standard agricultural practice.

In addition to improving water use efficiency, Morocco has also been exploring alternative water sources to supplement its decreasing natural resources. One of the most ambitious projects in this regard is the recently inaugurated desalination plant near Casablanca, the largest of its kind in Africa. Designed to produce 300 million cubic meters of water annually, the plant is expected to supply approximately 7.5 million people with drinking water. This initiative, developed through a public-private partnership, highlights Morocco's commitment to addressing water scarcity through innovative solutions.

Kaoutar Jamai is a lecturer and researcher at ESCA EM, specializing in strategic management and corporate sustainability. She earned her doctorate in agricultural economics from Ghent University in Belgium after completing her engineering degree in rural development strategy in Morocco. With experience as an agricultural marketing consultant and junior business manager at Attijariwafa Bank, she has contributed to over 30 feasibility and market studies. Passionate about strategic management and sustainability, she is committed to shaping the next generation of business managers through her teaching and research.

Desalination, however, is not without its challenges. The process is energy-intensive and expensive, and it can have environmental impacts, particularly in terms of brine disposal. Therefore, while desalination can play a crucial role in alleviating water shortages, it should be complemented by other measures, such as improving water efficiency in agriculture and increasing the use of recycled wastewater for irrigation, as seen in the case of some red fruit and vegetable greenhouses in Agadir.

While the initiatives described above represent significant steps towards addressing water scarcity and ensuring food security in Morocco, much more remains to be done. A comprehensive approach is necessary - one that integrates water management, agricultural policy, and environmental protection into a cohesive strategy.

This approach should involve revisiting and updating the Green Morocco Plan to prioritize sustainable agriculture and water conservation. Instead of focusing solely on high-value export crops, the plan should emphasize the cultivation of water-efficient crops that are essential for domestic food security. Moreover, Morocco must invest in research and development to return to traditional or ancestral varieties of crops that are naturally drought-resistant. By selecting and cultivating these resilient crop varieties, Morocco can reduce its agricultural water footprint and increase the sector's resilience to climate change.

In addition, it is crucial to train farmers in water-saving techniques and sustainable farming practices. Continuous government incentives could encourage the adoption of these practices, ensuring that water conservation becomes a standard part of agricultural operations. Raising public awareness about the importance of water conservation and the need to protect this vital resource is also essential. This could include campaigns to promote water-saving behaviors in households, industries, and agriculture.

Morocco's approach to managing food security amidst water scarcity involves a blend of intelligent agricultural management, investment in water-saving technologies, and strategic planning. The pursuit of water-efficient crops, the emphasis on ensuring the sufficiency of essential goods, and the expansion of drip irrigation systems exemplify the proactive measures already being taken, as well as those yet to be implemented. Moreover, the development of alternative water sources, such as desalination, underscores Morocco's commitment to finding innovative solutions to its water challenges.

However, the road ahead will require continued efforts to integrate water and agricultural policies, promote sustainability, and enhance the resilience of Morocco's food system. By adopting a comprehensive approach that combines policy reform, technological innovation, and public engagement, Morocco can ensure a sustainable future for its agriculture and food security, even in the face of ongoing water scarcity. This expanded and refined strategy will not only help Morocco secure its food supply but also position it as a leader in sustainable agriculture in the region. As climate change continues to pose new challenges, Morocco's experience could provide valuable lessons for other countries facing similar issues, demonstrating the importance of proactive planning and innovation in ensuring food security in a water-scarce world.

ESCA

BUSINESS REVIEW

#03

ESCA ECOLE DE MANAGEMENT

3-67 Bd de de l'Aéropostale, (CFC) - Casablanca / +212 5 22 20 91 20 +212 6 69 41 73 14

ESCAMAROC | ESCA_MAROC | ESCA_EM | ESCAEM | ESCAEMMAROC | ESCA_CASABLANCA

www.esca.ma