CLIMATE CHANGE AND THE EDUCATIONAL CONTINUUM: MAINSTREAMING CLIMATE CHANGE EDUCATION AND TRAINING POLICY AT THE NATIONAL LEVEL

Final Case Study Report

Senegal

Cette recherche a été réalisée par :

Centre d'Éducation et de Formation Environnementales

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REPUBLIQUE DU SENEGAL
MINISTERE DE L'ENVIRONNEMENT, ET DE LA TRANSITION ECOLOGIQUE
DIRECTION DU CHANGEMENT CLIMATIQUE, DE LA TRANSITION ECOLOGIQUE ET DES FINANCEMENTS VERTS

Cette recherche a été rendue possible grâce au financement de :

MECCE
MONITORING AND EVALUATING CLIMATE COMMUNICATION AND EDUCATION PROJECT

SEPN
SUSTAINABILITY AND EDUCATION POLICY NETWORK

MECCE Project Funded Case Study

Climate Change and the Educational Continuum | Mainstreaming Climate Change Education and Training Policy at the National Level[1]

Ce rapport es également disponible en français.

EXECUTIVE SUMMARY

Senegal recently approved its national strategy for integrating and strengthening climate change issues and dimensions into its education and training system. Entitled Adapt'Action, the strategy is based on two key principles: the educational continuum and skills-based approaches. The educational continuum refers to the gradual and continuous acquisition of knowledge or skills, taking into account the age and needs of the learner. Issues relating to the environment, particularly climate change, are addressed in a spiral progression during which essentials (e.g., concepts, definitions, vocabulary, skills) are taught in several contexts while also gradually increasing the difficulty and complexity of skills students are taught. Spiral progression, which is well known and adopted by the Senegalese education system, is well suited to climate education and training, including due to its ability to foster the behavioral changes necessary to take climate action.

The central question underlying this case study is "How could taking into account the dimensions and challenges of climate change give reality and weight to the notion of educational continuity in general education in Senegal?" The case study considers quality climate education and training as being responsive to geographical context and as being a cross-cutting, interdisciplinary component of curriculum.

The research included a document analysis to develop a clear understanding of the national context as well as key concepts, approaches, and tools. In the second part of the case study, 54 interviews were conducted with key stakeholders to understand relevant education policies, curriculum reforms, and teaching practices. This included state and non-state actors, both adults and young people, working along the climate change education continuum. Finally, a document analysis on good practices in educational continuity was used to help identify and map adjustments needed to better address climate change across the curriculum. Using a data analysis grid covering the entire educational continuum, climate change was analyzed as a cross-curricular dimension in relation to all subjects studied in Senegal within the domains of Language and Communication; Mathematics; Science and Social Studies; Physical Education, Sports, and Arts.

The primary finding of the case study is that, regardless of the grade level considered, climate issues were being given little consideration in Senegal's teaching programs. Of the subjects analyzed, only Science and Social Studies addressed climate change impacts. Within this subject, climate change was

[1] The opinions expressed in the report are not necessarily those of the MECCE project, which funded the research.

Recommended Citation : Faye, A., Fall, M., Sarr, M., Lo, H.M. & Faye, T. (2025). Climate Change and the Educational Continuum: Mainstreaming Climate Change Education and Training Policy at the National Level. MECCE Project Funded Case Study. Retrieved from https://mecce.ca/publications/mainstreaming-climate-change-education-policy.

addressed only as part of the World Discovery component of Geography courses, and the Education for Sustainable Development component of Living in One's Environment courses.

The case study highlights the importance of considering the systemic nature of climate change education in formal education. To this end, the policy mapping identified many existing policies that provide entry points for the new national strategy to integrate climate change into the Senegalese education and training system. Further, the mapping of state and non-state actors identified many stakeholders already providing climate-related education and training programs with children, and others that contribute to developing local leadership and school-based climate education and training programs. While the case study identified many programs being offered within and outside of schools at different levels of education and training, there is substantial room for improvement to embed climate issues across all disciplines.

In sum, the case study identifies ways to improve integration climate issues across basic education, middle school, high school, and training in relation to the new national Adapt'Action strategy. The report concludes with lessons learned about how to build education systems that offer students with climate learning opportunities along a continuum of interconnected knowledge, learning, and skills. The case study also identifies opportunities to better address climate change by improving Senegal's overall institutional approach, and increasing community participation in educational activities.

CCE POLICY

Education Governance in Senegal

The mission of the Senegalese education system includes promoting environmental preservation and building citizens' capacity for sustainable development. The Senegalese education system comprises three ministries: the Ministry of National, the Ministry of Vocational Training, and the Ministry of Higher Education, Research, and Innovation.

The Program for Improving Quality, Equity, and Transparency in Education and Training (PAQUET-EF), which is the sole reference framework for education and training at all levels, addresses the issue of educational continuity. PAQUET-EF operationalizes the country's education policy between 2018 and 2035. In addition to outlining the overarching strategies for the education and training sub-sectors, PAQUET-EF also describes education and training governance initiatives, cross-cutting policies, the institutional implementation framework, and the mechanisms by which education policy will be monitored and evaluated.

The national Adapt'Action[2] strategy was implemented to support the State of Senegal in achieving the objectives outlined in the PAQUET-EF. The strategy demonstrates the important role that education can play in responding to the challenges of climate change. Developed using a participatory process, Adapt'Action defines the methods and approaches for integrating and strengthening climate change issues into Senegal's education and training system. The integration uses two foundational principals: the educational continuum and skills-based approaches. The target sectors are education and training, which include general education (comprising preschool, elementary, middle, and secondary education), vocational and technical training (VET), and higher

[2] Adapt'Action, funded by the French Development Agency (AFD) in 2017, has supported 15 countries and regional organizations in meeting the challenge of operationalizing the Paris Climate Agreement by implementing the adaptation aspects of their Nationally Determined Contributions (NDCs). Adapt'Action's objective is to support the integration of climate and adaptation into all public policies and to accelerate investments in climate change adaptation, by promoting the development of projects and programs that can access international climate finance from the Green Climate Fund ; multilateral banks ; or national, regional, and bilateral development banks (notably AFD).

education. Until now, training, rather than education, has been seen as a supporting element of projects and programs, whereas the education sector is a key area for societal transformation and ecological transition.

Initiative Objectives and Theory of Change

Senegal is one of the most climate vulnerable countries in the world, due to its geographical location on the edge of the Sahara Desert and the Atlantic Ocean. Droughts and coastal erosion resulting from rising sea levels are therefore major risks that must be considered in education and training programs to build real capacity to respond to these phenomena.

The purpose of Adapt'Action is to increase Senegalese citizens' awareness of and capacity to respond to climate change—a phenomenon that will undoubtedly shape not only their lives, but also their societal and professional choices. Thus, Adapt'Action's objective is to adapt the education system to the national climate context. The initiative recognizes that change in individuals, organizations, and societies is complex due to the multiple forces and actors acting and interacting in different directions. Actors who want to contribute to a transformational process in society must understand this complexity and develop frameworks to help them understand how they can contribute significantly to these paradigm shifts. Empowering young people through the acquisition of knowledge and skills at school and throughout their lives will help transform the adverse effects of climate change into employment and business opportunities. The goal is to create a critical mass of climate-competent citizens. That is, citizens who are able to understand, plan, and act in response to the current impacts of climate change, and to lay the foundations for a transformation toward a more resilient society and economy. The initiative thus acts as a real lever for promoting eco-citizenship and sustainable development by forging links between the formal and informal spheres of family, community, and social life.

The theory of change presented in Figure 1 illustrates how each of the four outcomes of the proposed intervention will overcome the identified barriers in order to achieve the expected final impact and solve the problem in question.

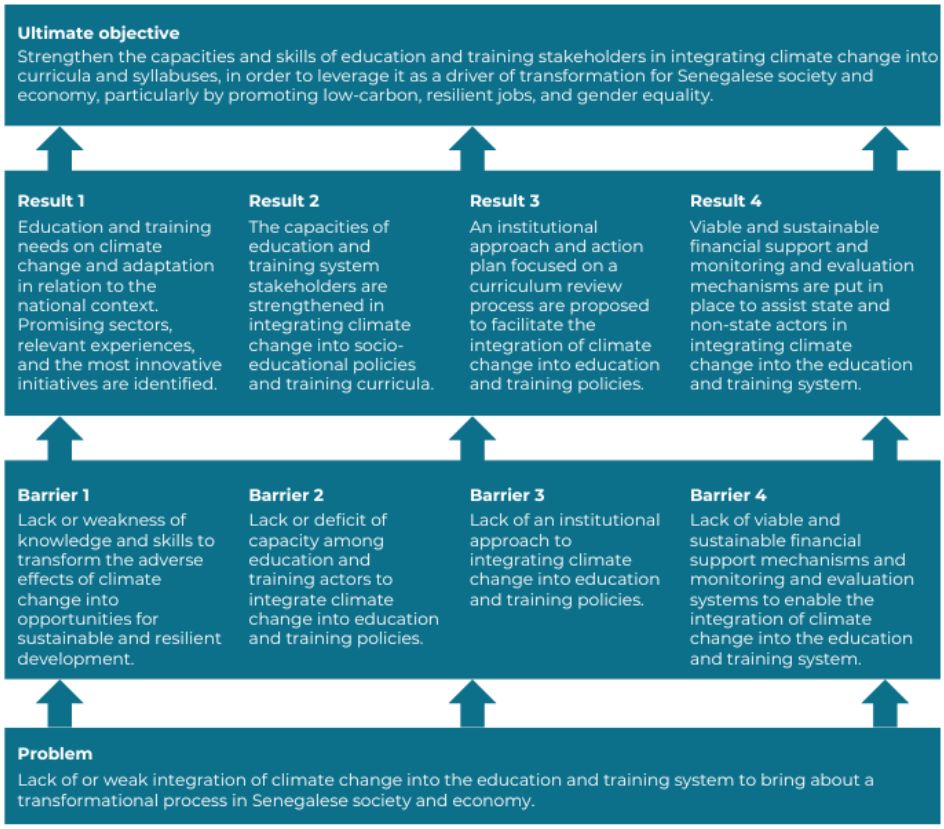

Figure 1. Theory of change for integrating climate change into Senegal's education and training system

METHODS

Research Questions

This case study maps existing education policies, practices, and stakeholders in Senegal, and explores ways to achieve the country's new national Adapt'Action strategy for integrating climate issues into the education and training system. The overall research question is: "How could taking into account the dimensions and challenges of climate change give substance and weight to the notion of educational continuity in general education in Senegal?" More specifically:

QR1: What reforms, policies, curricular approaches, and teaching practices have been developed to take educational continuity into account as applies to climate change education?

QR2: What adjustments need to be made to school curricula to strengthen interdisciplinarity and better address climate change?

Research Methods

Preliminary document review: The first part of our methodological approach involves collecting available documents. Analyzing these documents provided a clear understanding of the context and enabled us to identify the key stakeholders involved. This preliminary review was supplemented by an in-depth examination of the documents during subsequent data collection phases. The comprehensive document review enabled us to use analysis grids to process information and data (e.g., academic, national policy, studies by other donors, NGOs, research consultancies, scientific institutions) relating to the educational continuum, education, training, and climate change. We analyzed the documents based on keywords identified by the research team as relevant: education, teaching practices, educational continuum, adaptation, mitigation, resilience, and vulnerability.

Interviews: In the second part, 54 interviews were conducted to examine diverse experiences and perspectives among key stakeholders at the national and regional levels (St. Louis and Matam in the North, Dakar in the West, Kaolack in the Center of the country, Ziguinchor in the South, and Kédougou in the East). The interviews helped establish a baseline in terms of education policy, key curriculum reforms, and teaching practices along the educational continuum. A first draft map of key state and non-state actors likely to play a role in taking the educational continuum into account was also produced from the interview data. The interview guides were tailored to each stakeholder and organization.

In total, 23 female and 31 male participants, including adults and young people, were interviewed. Those interviewed included officials from the General Inspectorate of Education and Training, environmental advisors from the Ministry of National Education, officials from the Ministry of the Environment and Ecological Transition, regional water and forestry inspectors, heads of regional divisions of the Environment and Classified Establishments, project leaders from civil society organizations, and teachers. Major non-state actors such as UNESCO and UNICEF, and other national or local organizations involved in education and training on climate change were also interviewed. Young people leading initiatives were also interviewed in the case study; young people coordinated 30% of the initiatives (which were mainly led by civil society organizations focused primarily on reforestation, awareness-raising, training, and entrepreneurship). Among the young people interviewed, 35% were girls.

Focus groups: In addition to the interviews, focus groups were organized with teachers in Ziguinchor and Kaolack, with civil society organizations in St. Louis and Matam, and with students Dakar and Kédougou. The focus groups gathered different stakeholder perspectives, particularly on teaching

practices, extracurricular and after-school activities, and opportunities to build synergies and other actions to reinforce the data already collected.

Second literature review: A complementary literature review was organized to map the needs for readjustment related to the challenges and dimensions of climate change in school curricula that could strengthen interdisciplinarity. We continued the literature review that had been started, analyzing existing strategic documents in the field of elementary, middle, and secondary education with regard to climate change issues. A total of 37 documents (e.g., policies, plans, programs, projects) were reviewed and analyzed.

Mapping of readjustment needs: We then mapped the readjustment needs related to the issues and dimensions of climate change at the level of school curricula necessary for interdisciplinarity using a data exploitation grid on the educational continuum, in conjunction with a description of good practices. The methodological approach for this task consisted of collecting and studying technical and scientific work (e.g., study reports, scientific publications, strategic planning documents).

The analysis used a "conceptogram," which maps a concept as a whole and its peripheral elements. When well developed, the conceptogram presents a snapshot of all aspects of a problem or subject of study. It is therefore a helpful tool for developing an interdisciplinary approach to integrating climate change along the educational continuum. Conceptograms can serve as a diagnostic, predictive, and explanatory tool. See Figure 2, for an example from the Directorate of General Secondary Education of the Ministry of National Education, which illustrates the multidisciplinary dimensions of climate change education. The conceptogram helped determine necessary adjustments to better integrate climate change into Senegal's education and training system. This analysis also drew on experiences and best practices in the field of educational continuity to highlight the integration of climate change issues and dimensions as a practical response.

See Appendix A for copies of the data collection instruments.

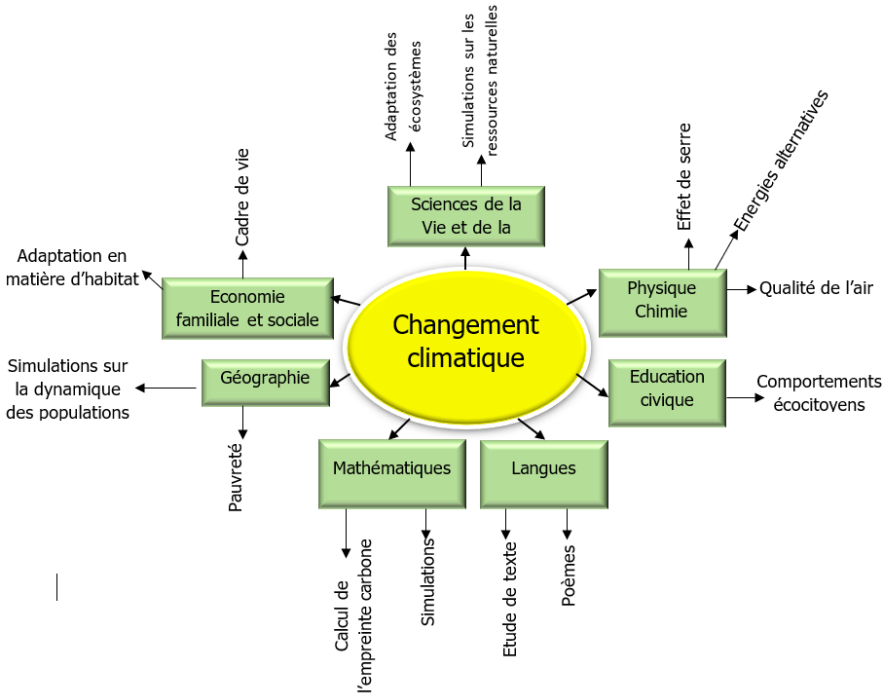

Figure 2. Example conceptogram of climate change education[3]

[3] Adapted from Direction de l'Enseignement Moyen Secondaire General/Ministère de l'Éducation Nationale (2022).

CASE STUDY FINDINGS

Most Important and Interesting Findings

Mapping policies: The document analysis identified many relevant policies and entry points for developing and implementing the national strategy on education and training on climate change in Senegal.

- Senegal's Systemic Transformation Strategy (ST2S) and the Emerging Senegal Plan, which the ST2S replaces identifies the environment and ecological transition as a major pillar for economic development and the reduction of social and territorial inequalities, including by building Senegalians' skills, knowledge, and capacity.
- Senegal's Nationally Determined Contribution references the "Emerging Senegal Plan," as well as sectoral programs for the sustainable management of natural and environmental resources.
- The Program for the Improvement of Quality, Equity, and Transparency (PAQUET) specifies that "Education and training make a decisive contribution to the qualitative transformation of Senegal in terms of sustainable, economic, social, cultural, political, and environmental development." *(translated from original)*
- The Basic Education Program through its sections "living together" and "living in one's environment."
- The Policy Letter for the Environment, Sustainable Development, and Ecological Transition Sector, which has the overall objective: "To create a national dynamic for improving environmental and natural resource management, integrating sustainable development principles into policies, and strengthening the resilience of populations to climate change." *(translated from original)*
- The Strategy for Strengthening Skills for Resilient Development in the Face of Climate Change and Job Creation, which identifies Adapt'Action as important for "integrating climate issues into the Senegalese education system at the primary, middle, and secondary levels, in technical and vocational training, as well as in universities and higher education institutions." *(translated from original)*
- The "Operator's Guide" produced by the Ministry of National Education's Directorate of General Middle and Secondary Education to "help facilitate the implementation of activities related to sustainable development, climate change, and vulnerability." *(translated from original)*

Mapping curricular approaches: Analysis of the approaches used by the various stakeholders reveals a diversity of actions carried out by one or more of them. For example, within the Faculty of Education and Training Sciences and Technologies, the conceptual approach, competency-based approach, and project-based approach are the most widely used. The conceptogram developed for a climate change course is in Figure 3.

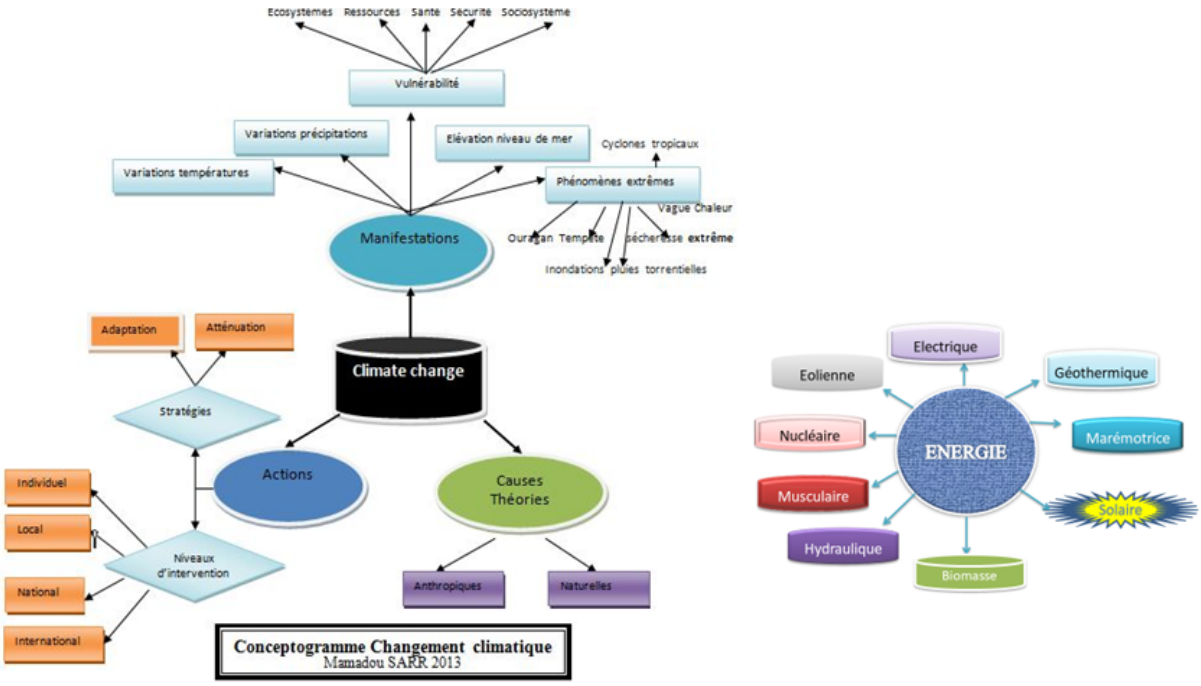

Figure 3. Conceptogram of a course on climate change offered by the Faculty of Science and Technology of Education and Training[4]

The analysis revealed that applying project-based climate change education approaches in the Sub-saharan African context means addressing drought, desertification, imbalance between population and resources, and the effects of climate change. Taking climate issues into account in this context leads to a functional approach aimed at identifying and studying different ways of addressing problems, based on action and the search for alternative solutions. Thus, the research found that climate change education in Senegal can be :

- A learning tool;
- A support for environmental rehabilitation, sustainable development, or climate change mitigation activities;
- A laboratory for combating poverty, promoting sustainable development, and fighting climate change; and
- A framework for experimenting with school/environment integration.cherche à résoudre un problème (d'environnement, d'adaptation au changement climatique, d'atténuation, de vulnérabilité).

Mapping educational practices: The educational practices carried out by state and non-state actors were found to include concrete actions such as the creation of school gardens, reforestation, flower beds, murals, school newspapers, travelling exhibitions, awareness days, advocacy actions, budding engineers sessions, and role-playing games. For example, the Operator's Guide provides worksheets for carrying out certain actions in schools or the community, such as:

- Creating a school newspaper on climate change: the guide outlines principles, types of skills required, and a series of activities. Students learn about the different components of newspapers (e.g., front page, sections, articles) and technical aspects (e.g., choosing a theme, creating editorial lines, deciding on a layout).

[4] Developed based on a course in Environmental Education and Sustainable Development offered by the Department of Life and Earth Sciences at the Faculty of Science and Technology of Education and Training.

- Developing a (traveling) exhibition on flooding, with worksheet about how to create such an exhibition.

Mapping state and non-state actors working along the climate change education continuum: The data analysis identified civil society organizations committed to encouraging children to get involved in environmental and climate action through practical, fun activities that make complex concepts more accessible. Examples of such organizations include NEBEDAY, GAIA, and Jeunes Volontaires pour l'Environnement (Young Volunteers for the Environment).

The analysis also identified organizations that contribute to leadership development and local and school-based green initiatives, including the Coalition of Synergistic Organizations for the Defense of Education (COSYDEP), the Association for Sahelian Agro-Ecological Youth Action (J.A.A.E.S), and the Association for Research, Action, Development, and Environment in the Sahel (ARADES).

Mapping existing and potential curricular content and entry points

Climate change is not explicitly covered in the Basic Education Curriculum (CEB). Climate change and its impacts are covered in Living in the Environment and, to a lesser extent, in Geography. The Living in Your Environment course teaches students to 1) identify and explain environmental, health, and population issues in their immediate surroundings and 2) develop the ability to propose appropriate and realistic solutions.

When analyzing the CEB for integration of climate change issues by grade, climate change is addressed in the first and second years of elementary school (CE1 and CE2), the first year of middle school (CM1), and second year of middle school (CM2). These curricula take into account the psychological level of the child.

Taking into account the educational continuum, the analysis identified several opportunities for the curriculum to better address climate change, such as:

- Living in one's environment, due to its focus on environmental, health, and population issues;
- Language and communication activities (e.g., vocabulary, reading) through provision of supporting texts focused on climate change issues; and
- Visual arts, to teach children to observe their surroundings and help make them aware of challenges they face due to climate change.

An analysis of school curricula for Life and Earth Sciences (SVT), Home Economics, Geography, Physics, and Chemistry traced the main concepts relevant to climate change, along with existing or potential interdisciplinary links. Relevant curricular content relates to environment, diversity, the living environment (space, function, quality, degradation, management), pollution, natural resources and their management (biodiversity, water, soil, energy, space), resources (renewable, non-renewable), combating drought, desertification and environmental degradation, balance, climate, energy, hydraulics, systems, sustainable development, management, the greenhouse effect, land use planning, soils, and vegetation.

Climate change specifically is taught in geography in the ninth grade (the end of middle school) and in secondary education in the general section, where it serves as a starting point for rediscovery or as an illustration of inductive and deductive reasoning. The approach to teaching these concepts is cognitive in focus.

The mapping also identified many concepts such as energy, space, movement, pollution, management, resources, and interaction, which can be approached from an interdisciplinary perspective. For example, energy is a theme that cuts across several school subjects. Geography

addresses energy in terms of land use planning; Mathematics in terms of temperature differences; and Languages in terms of vocabulary.

The analysis identified opportunities to address climate change issues through their impacts on people's daily lives, and the ways in which climate change is taught in order to build more climate-competent citizens.

Psychosocial Aspects

The case study shows that climate change is causing both immediate mental health problems, such as anxiety and post-traumatic stress, and long-term disorders due to factors such as displacement and the breakdown of social cohesion in both rural and urban populations.

In the focus groups in the Matam and Dakar regions, some of the people interviewed described the anxiety and stress they experienced during the floods and exposure to heat waves. One participant in Dakar said, “I am so traumatized by the floods that I can't think about anything else,” and a participant in Matam said during a focus group, “The intense heat and frequent sand dust have ended up impacting our lifestyles, and it's not easy.”

This is points to the importance of the national strategy for integrating climate change into education to address the risks and impacts of climate change.

Action-learning Aspects

Adapt'Action suggests creating extracurricular and after-school activities, such as educational school gardens, which would allow elementary and middle school students to work on topics related to climate change. However, the analysis found that action learning around climate issues is not currently well addressed in the school curriculum. In terms of action-learning, the students who participated in the research were enthusiastic about:

- Conducting documentary research and surveys to feed into their newspaper articles;
- Carrying out action-based learning through trial and error;
- Participating in multidisciplinary learning in a garden;
- Taking part of group work with a spirit of healthy competition; and
- Diversifying activities, such as taking photos, searching for clues, and creative writing.

Climate and Social Justice Aspects

The stakeholders we interviewed confirmed the need to reform curricula to include justice aspects, and support the development of activities with students, teachers, and school management committees. The research identified entry points for inclusion of advocacy actions, including dissemination of decisions related to UN climate change negotiations, in school curricula. Further, local case studies examining issues such as diverting rainwater to crop fields and agricultural losses caused by construction in non-building zones were also suggested.

Cultural and Regional Contexts

The Adapt’Action strategy also recommends contextualizing learning situations with respect for customary practices, while involving local communities in decisions about school, extracurricular, and after-school activities. The case study highlights that in some schools without perimeter walls, it is virtually impossible to successfully reforest or install a school garden due to stray animals. This is also the case in areas of armed conflict such as Casamance, where teachers lament the impossibility of carrying out large-scale environmental protection actions in certain localities, especially those across

borders. Also emerging from the research was the need to organize learning activities for nomadic groups, which would require different methods than those used for less mobile populations. Finally, the organization of programs on community radio stations and dissemination of certain messages through religious leaders and traditional authorities emerged as important for facilitating climate learning in Senegal.

Geography and Places

The research identified potential practical exercises that could be created as part of implementing the strategy, such as calculating the ecological footprint, taking into account various areas such as food, travel, housing, and use of digital technology. Other actions such as composting for school gardens and bio-digesters to reduce the impact of deforestation for domestic energy needs, were also identified for consideration. The research also identified a need to develop school projects and educational visits to provide hands-on learning about climate change. The Adap'Action strategy outlines that implementation of the national climate change education strategy should reinforce what is already being done in schools. As a result, School Management Committees will conduct calls for projects. This will take place in conjunction with ongoing curriculum reforms, further strengthening climate content in teaching and learning.

CASE STUDY IMPACTS

Influence of the Case Study on Conceptualizations of Quality CCE

The case study has helped identify many entry points for strengthening integration of climate issues into Senegal's education and training system to implement the new national Adapt'Action strategy. Of particular value is the broad stakeholder base identified by the mapping. The the knowledge and skills of these stakeholders build capacity to offer high-quality learning opportunities within the general education subsector. The case study's mapping of curricular content also helped identify ways to improve the curriculum so it is better adapted to the climate realities of Senegal. Specifically, the case study has facilitated interdisciplinary integration of climate along the educational continuum.

The Center for Environmental Education and Training, as a body of the Ministry of the Environment and Ecological Transition responsible for developing environmental education, has an important role to play in the utilizing the case study's results. The Centre for Environmental Education and Training has the following missions: to promote education on the environment, sustainable development, and eco-citizenship; to develop and implement a training and capacity-building strategy in the field of the environment and sustainable development; to support the Ministry of the Environment and Ecological Transition services and partners in their training and education activities; to forge strategic partnerships around environmental education and sustainable development; and to coordinate environmental education and training activities.

The results of our case study provide the Centre with additional and consolidated information to better guide its climate change education coordination activities. To achieve this, the Centre is working to address three challenges:

- Institutional challenges: Integrating the strategy into an interministerial framework involving the Ministry of the Environment and the Ministry of Education.
- Organizational challenges: Establishing a structure to coordinate actions.
- Communication challenges: Mobilizing all stakeholders.

Implications and Impacts of the Case Study at Different Levels

On the political front, our case study will contribute to improving the policy instruments that govern issues relating to education and training on the environment, climate change, and sustainable development, in particular the General Policy Letter for the Environment, Sustainable Development, and Ecological Transition Sector (2022-2026), the General Policy Letter for the Education and Training Sector (LPGSEF 2018), and the Program for Improving Quality, Equity, and Transparency - Education and Training (PAQUET-EF 2018), among others. In addition, the Ministry of National Education has defined a new vision: "To develop our education system towards an inclusive and efficient educational society, with the ultimate goal of training, by 2035, citizens who are firmly grounded in their endogenous base of African and spiritual values, while being prepared for the challenges of sustainable development, science and technology, digital technology, and artificial intelligence." This vision is based on 11 levers, the seventh of which explicitly refers to sustainable development: promoting the teaching of English, science and technology, digital technology, and sustainable development.

Climate change is one of the greatest ecological challenges facing humanity. While achieving the Sustainable Development Goals (SDGs) requires climate policies and technologies, in which progress is being made, the transition to a low-carbon economy calls for other initiatives and approaches in which education and training have a crucial role to play.

The adaptation needed in Senegal requires transformations that can only come about through education and training. The general education system must provide access to knowledge that enables learners to understand and develop critical thinking skills needed to navigate the climate crisis--but above all, they must equip learners with the skills that empower them to take climate action. Education and training are essential for this, a fact that is now recognized internationally, as evidenced by the provisions contained in the various treaties and initiatives governing climate change and sustainable development.

This is why the strategy we studied is so important. Its aim is to ensure that curriculum, teaching, and training content offered not only promote low-carbon development and climate resilience, but also support the creation of new jobs and, in so doing, promote the employability of young people.

Initiatives have therefore already been taken in a number of Regional Education Staff Training Centers, which provide initial training for teachers to introduce student teachers to environmental and climate education. While these are certainly worthy initiatives, they need to be modeled and generalized.

The path to addressing climate change is clear. There can be no sustainable development without proper management of environmental changes and climate challenges that could compromise the development envisaged.

Scaling and Applicability of the CCE Initiative to Other Contexts

Our case study focuses on one of the first strategies developed in the West African subregion, and indeed on the continent as a whole, to integrate climate change in an entire education and training system. This stratgy is a concrete expression of the provisions contained in international instruments, such as the UN Framework Convention on Climate Change, relating to the place and role of education and training. This strategy and case study can help provide a benchmark for countries facing similar circumstances.

The objective of Adapt'Action is to internalize climate issues in the education and training system in order to strengthen Senegal's capacity to respond to the challenges of climate change. The challenge

that the strategy seeks to address is how the education system will prepare pupils, students, future professionals, and all other stakeholders in the education and training sector to develop the knowledge, skills, and abilities that will enable them to mobilize resources from different fields of knowledge (interdisciplinarity and educational continuum) to adapt and transform the adverse effects of climate change into opportunities.

Lessons learned from the case study include:

- At the local level: The need to contextualize actions and involve local populations in the activities to be undertaken.
- At the national level: The importance of establishing a framework for consultation to ensure synergy between state and non-state actors.
- At the regional level: Developing a comprehensive mapping of actors and good practices to ensure high-quality implementation of the strategy, informed by a broad stakeholder base.

We recommend that countries wishing to implement a similar strategy consider:

- Ensuring political dialogue between actors at all levels, but even more so between the ministries that will be responsible for implementation. This dialogue is essential for ensuring give concrete reality to the notion of educational continuity;
- Creating an information and communication campaign to raise awareness and capacity for climate action aimed at the general public;
- Training for senior ministry officials to help them understand the real challenges of climate change for the country's development and the key role they play in transforming society through education and training;
- Communicating to lay the foundations for collective ownership of climate change issues, break down climate-skeptical or gender-based stereotypes, and perceptions that hinder the emergence of a breakthrough citizen commitment to climate change adaptation;
- Ensuring the genuine involvement of all stakeholders; and
- Monitoring, reporting, and evaluating the actions taken to implement the strategy.

Overall, we recommend establishing an organizational mechanism, making a catalog of best practices available, and developing a comprehensive institutional approach to support implementation.

REFERENCES

1. AFD/MEDDTE (2022). Elaboration d'une stratégie de renforcement des compétences pour un développement résilient face au changement climatique et créateur d'emplois : stratégie, plan d'actions et plan de renforcement des capacités des acteurs 186 p

2. Berthelot, Michelet, 2007, étude de la contribution du Programme de formation-information pour l'environnement à la pérennisation de l'éducation relative à l'environnement dans l'enseignement primaire sénégalais, Faculté des Sciences de l'Education Université Laval Québec, 435p

3. Berthelot, Michelet, 2009. L'éducation relative à l'environnement au Sénégal : un puissant levier de transformation des liens sociaux. Éducation et francophonie, 22p

4. CARE (2019) Manuel Pratique Analyse des Vulnérabilités et des Capacités d'adaptation aux changements climatiques 79 p

5. COREN (non daté) Etablir le bilan carbone de votre école. Document d'accompagnement 24 p

6. CEFE/MEDD, 2004. Etat des lieux de l'éducation et la formation environnementales

7. CSE. 2015. Rapport sur l'Etat de l'environnement au Sénégal, 199p

8. Coalition Education et coll (2023) Etat des lieux des enjeux de l'éducation à l'environnement et au développement durable au Togo et au Sénégal 28 p

9. DEFCCS/MEDD, 2014. Politique forestière du Sénégal (2005-2025), actualisée en 2014. 105p

Forum Planèt'ERE, 1997. Déclaration de Montréal, dans le cadre du 1er Forum francophone international de l'éducation et de la formation relatives à l'environnement pour un développement durable. Montréal.

10. GAKOU CAMARA, Fanta, 1991. Etat et perspectives de l'éducation et de la formation environnementales non formelles des agents de santé communautaire féminins - Cas du projet de restructuration d'un quartier sous-intégré de Dakar : DALIFORT. 114 p.

11. GUEYE, Moussa, 2002, L'éducation environnementale : la prise en compte du domaine socio-affectif : analyse des pratiques des maîtres. Institut des Sciences de l'environnement, 99p.

12. République du Sénégal CDN (2020) contribution déterminée au niveau national du Sénégal MEDDTE 48 p

13. République du Sénégal (2018) Plan Sénégal émergent : plan d'actions prioritaires 2019-2023. Ministère de l'Economie, des Finances et du Plan 143 p

14. République du Sénégal (2013.). Programme d'Amélioration de la Qualité, de l'Équité et de la Transparence PAQUET secteur éducation 2013 2025 Ministère de l'Education nationale 337 p

15. République du Sénégal 2005). Curriculum de l'éducation de base Guide Etape 2. Ministère de l'Education nationale 223 p

16. République du Sénégal (2005). Curriculum de l'éducation de base Guide Etape 3. Ministère de l'Education nationale 256 p

17. République du Sénégal (2022). Guide l'opérateur en vue de la mise en œuvre de programmes autour de la thématique du développement durable en lien avec le changement climatique 81 p

18. République du Sénégal (2007). Programme de 6ème, 5ème, 4ème, 3ème Collèges, Blocs scientifiques et techniques MEN/IGEF/Commission nationale 68 p

19. République du Sénégal, 2012. Stratégie Nationale de Développement Economique et Social 2013-2017. 86 p.

20. République du Sénégal, 2013. Politique nationale de gestion des Zones Humides du Sénégal, MEDD, DPN, WI. Version provisoire, 85p

21. République du Sénégal, 2013. Stratégie nationale et plan national d'actions pour la Biodiversité, MEDD, DPN, 89p

22. République du Sénégal. 2014. Plan Sénégal Emergeant, GCS, 107p

23. République du Sénégal. 2014. Stratégie nationale pour les aires marines protégées du Sénégal. Rapport provisoire, 32 p.

24. République du Sénégal (2006) Programme de géographie MEN/IGEF/Commission nationale 46 p

25. République du Sénégal (2015). Programme des Sciences de la Vie et de la Terre de l'enseignement secondaire général. MEN/IGEF/Commission nationale 156 p

26. République du Sénégal (2008). Programme des Sciences de la Vie et de la Terre de l'enseignement moyen. MEN/IGEF/Commission nationale 59 p

27. République du Sénégal Programme de PC (2008) Programmes de Sciences physiques des cycles moyen, secondaire général et technique. MEN/IGEF/Commission nationale 248 p

28. Sarr, Mamadou (2008) Mon école et moi 36 p. Enda Editions ISBN 92 9130 059 0

29. Sarr, Mamadou, Ndiaye R,aphaël (2010) Dix fiches sur l'assainissement 54 p ISBN 92 9130 084 8 Enda tiers-monde

30. Sarr, Mamadou (2008) ; Eau, source de vie et de plaisir 36 p Enda Editions ISBN 92 9130 060 X

31. UNESCO (2017) Ressources pour l'éducation au changement climatique 12 p

32. UNESCO/MEN/MEDDTE (2023). Initiative nationale pour l'EDD 2030 50 p

33. PFIE/Sénégal, 1999. Éducation environnementale au Sénégal – Acquis et défis. Forum international au Sahel sur l'éducation environnementale. 157p

34. PFIE/Sénégal, 1999. Stratégie nationale d'éducation environnementale, 64p

35. UNESCO/PNUE, 1976. La Charte de Belgrade. 5p.

36. UNESCO/PNUE, 1978. Rapport final. Conférence intergouvernementale sur l'éducation relative à l'environnement (Tbilissi, URSS). 101p

37. UNESCO/PNUE, 1987. Déclaration de Moscou dans le cadre du Congrès international sur l'éducation et la formation relatives à l'environnement. 27p

APPENDIX A. DATA COLLECTION INSTRUMENTS

Interview Guide

RUBRIQUE	REPONSES	OBSERVATIONS
Nom de l'Institution porteuse de l'initiative		
Titre de l'activité ou du projet		
Localité d'intervention de l'activité ou du projet		
La situation environnementale ou pédagogique de référence		
Le problème que le projet ou l'activité était censé résoudre ?		
Principales activités menées pour atteindre ces objectifs ?		
Bénéficiaires directs et indirects		
Changement intervenu suite à l'intervention		
• Au plan environnemental		
• Au plan social		
• Au plan pédagogique		
Expliquer pourquoi vous attribuez le changement intervenu à l'intervention		
Coût estimatif de l'activité.		
Résultats : Y a-t-il des objectifs du projet que vous n'avez pas du tout atteints ? Si oui, quelles sont les raisons ?		
Résultats : (Quels enseignements avez-vous tirés de l'expérimentation ?) Recommandations : Quelles actions facilitatrices d'appui et d'accompagnement suggérez-vous pour améliorer le dispositif du projet à l'échelle ? Avez-vous d'autres commentaires ?		
Est ce qu'il y a eu des difficultés rencontrées dans la mise en œuvre ? Si oui, lesquelles ? Quelles sont les solutions mises en place pour lever ces contraintes ?		

Nota Bene : L'organisation peut remplir autant de tableaux si elle déroule plusieurs projets en rapport avec le thème

Mapping Analysis Grids

** To request an example of a filled-in grid, please contact mecce.info@usask.ca*

Grille d'analyse 1 :

Initiative	Objectifs	Principales activités	Zone d'intervention	Résultats obtenus	Acquis, difficultés, contraintes et recommandation	Critères d'analyse					
						Pertinence	Efficacité	Efficience	Durabilité	Impact	Replicabilité

Grille d'analyse 2 :

Structure	Initiative	Contribution de l'initiative d'éducation au changement climatique					
		Prise de conscience	Acquisition de connaissances	Développement d'un état d'esprit	Acquisition de compétences	Capacité d'évaluation	Participation effective

Grille d'établissement du bilan carbone d'un département, d'une structure scolaire :

Informations générales sur le département		
Nombre d'étudiants		
Nombre de membre du personnel du département		
Lampes	Nombre	
	Nombre d'heures d'allumage journalier	
Ventilateurs	Nombre	
	Nombre d'heures d'allumage journalier	
Climatiseurs	Nombre	
	Nombre d'heures d'allumage journalier	
Ordinateurs fixes	Nombre	
	Nombre d'heures d'allumage journalier	
Imprimantes	Nombre	
	Fréquence d'utilisation	
Photocopieurs	Nombre	
	Fréquence d'utilisation	
Vidéoprojecteurs	Nombre	
	Fréquence d'utilisation	
Nombre de rames de papier achetées annuellement		
Informations individuelles sur les étudiants et le personnel		
Energie		
Combien		
Téléphone portable	Combien	
	Combien de temps de rechargement journalier	

Ordinateur portable	Combien de temps de rechargement journalier		
Autres appareils électroniques	Combien		
	Combien de temps de rechargement journalier		
Alimentation	Calcul valeur énergétique petit déjeuner		
	Calcul valeur énergétique déjeuner y compris boisson		
	Calcul valeur énergétique diner y compris boisson		
	Autres repas		
Déplacements	Distance domicile Ecole		
	Moyens de transport	A pied	
		En bus	
		Vélo	
		Moto ou scooter	
		Voiture individuelle essence	
		Voiture individuelle diesel	
Logement	lampes		
	Téléviseurs		
	Réfrigérateurs		
	Autres appareils électroménagers		
	Branchement Ordinateurs		
	Branchement téléphones		
Santé			