REPORT ON THE COMPARATIVE ANALYSIS OF CURRICULUM ANALYSIS RESULTS AGAINST UN RECOMMENDATIONS FOR EDUCATION ON CLIMATE MIGRATION

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1. INTRODUCTION

Following the content analysis of secondary school curricula addressing climate migration in Croatia, Slovenia, Hungary, the Czech Republic, and Slovakia, the development of a database, and the preparation of a case study on curriculum content, a content analysis was conducted of the most relevant documents published by United Nations organisations (hereinafter: UN) and the International Organization for Migration (hereinafter: IOM) containing recommendations for education on climate migration. The analysis was carried out during August and September by Mirela Holy, PhD, and Marija Geiger Zeman, PhD. The first step in conducting the comparative analysis involved identifying and selecting the most relevant UN publications addressing education on climate migration through a Google search. Following the initial selection of a larger number of documents, the content analysis focused on the following five publications identified as the most relevant:

1. IOM (2024), World Migration Education Toolkit;
2. UNESCO (2019), Migration, Displacement and Education: Building Bridges, Not Walls;
3. UNESCO (2023), Learning at Risk;
4. UNESCO (2023), South-Eastern Europe Regional Synthesis;
5. UNESCO (2020), The Impact of Climate Displacement on the Right to Education.

The key document used for the comparison was the 2024 publication of the International Organization for Migration (IOM), as it is specifically designed to support teachers in teaching about migration, migrants, and human geography. Importantly, the material is explicitly tailored to secondary school teachers of human geography and therefore targets an educational level that closely corresponds to that addressed by the KlimEd project. Of particular relevance within this publication is Module 7, entitled *Climate Change and Migration*. The stated learning objectives of this module are to enable students to explain the relationship between climate change and migration, understand the impacts of climate change on human mobility and the relationship between food insecurity and migration, and develop the ability to discuss public policies related to environmental change and human mobility. In addition to reading materials, the module includes toolkits featuring case studies and interactive scenarios, which can be regarded as innovative teaching media of the kind that constitute a central focus of the KlimEd project. This document therefore provided the principal basis for developing curriculum recommendations for secondary school education on climate migration. Accordingly, it can be concluded that the KlimEd project builds upon, continues, and further develops the educational approach identified by the IOM, while adapting it to national curricula and strengthening it through the development of innovative teaching media, particularly an educational video game. The other selected documents were relevant to specific elements of the comparison with the findings of the previously conducted curriculum content analysis.

The second step of the analysis involved a close reading of the selected documents, with particular emphasis on curriculum recommendations concerning approaches to teaching about climate migration. To ensure that the content analysis of the documents was conducted in a consistent and standardised manner, an analytical matrix was developed for the content analysis of the IOM and UN documents, as presented in Table 1.

Table 1. Analytical Matrix for the Content Analysis of UN Documents

Dimension	Question
Cognitive	Does the document address the understanding of the causes, processes, and consequences of climate migration?
Socio-emotional	Does the document address the development of empathy, a sense of global interconnectedness, justice, and responsibility?
Behaviour / Action	Does the document provide guidance for analysing opportunities for action and relevant public policies?
Interdisciplinarity	Does the document integrate environmental, social, economic, and political dimensions, and if so, in what ways?
Climate Justice	Does the document address inequalities in exposure to climate impacts and in patterns and opportunities for mobility?
Scientific Grounding	Does the document avoid oversimplifying the relationship between climate change and migration as a direct causal relationship?

Source: Authors of the report

Following the content analysis, which was conducted on all documents as units of analysis by both researchers in parallel and independently of each other, the findings were entered into an Excel spreadsheet structured according to the predefined analytical categories. The results of the two independent analyses were subsequently compared and validated, and a final Excel spreadsheet containing the consolidated results of the analysis was produced. This was followed by the third step, in which the findings of the content analysis of the UN documents were compared with the results of the curriculum content analysis. The UN documents and the recommendations contained therein, particularly the IOM's *World Migration Education Toolkit*, were treated as a benchmark and model for education on climate migration. This comparison enabled the identification of gaps and opportunities for improving the existing national and subject-specific curricula with regard to climate migration, which subsequently served as the basis for formulating recommendations. This stage of the analysis was conducted using the analytical matrix presented in Table 2.

Table 2. Benchmark Analysis of Curricula against IOM and UN Documents

Benchmark Dimension	Expected UN Standard	Indicators from Curriculum Analysis	Status in the Curriculum	Level of Alignment with UN Standards	Identified Gap	Opportunity for Curriculum Improvement	Basis for Recommendation
Cognitive Dimension	Students understand the causes, processes, and consequences of climate migration, as well as the complexity of the climate–mobility nexus	Explicit presence of climate change and migration; connections between the topics; depth of coverage; learning outcomes related to knowledge, analysis, and interpretation	Summary of empirical findings for the country/subject	**0 – none / 1 – partial / 2 – high**	E.g., both topics are present but are not connected; the relationship is addressed only at an informational level	Explicitly connecting climate and migration processes; introducing causal analysis	Introduce learning outcomes that enable students to understand the complex *climate–migration nexus*
Socio-emotional Dimension	Education fosters empathy, solidarity, a sense of global interconnectedness, responsibility, and justice	Empathy/values; representation of migrants; social context; tone towards migration	Empirical finding	0 / 1 / 2	E.g., migration is addressed neutrally, without incorporating the perspectives of people affected by climate change	Incorporating migrants' experiences, multiple perspectives, and the humanitarian dimension	Develop socio-emotional learning outcomes alongside cognitive ones
Behaviour / Action	Students are able to analyse opportunities for action, public policies, and societal responses, and to participate in discussions about solutions	Encouragement of action; civic engagement; problem-solving; debates, project work, simulations	Empirical finding	0 / 1 / 2	E.g., content remains at the level of factual knowledge transmission	Problem-based tasks, debates, policy scenarios, project-based learning	Move from *learning about* towards *learning for action*
Interdisciplinarity	Climate migration is addressed as an environmental, social, economic, political, developmental, and human rights phenomenon	Social dimensions; intersectionality; representation of climate change; distribution of content across subjects	Empirical finding	0 / 1 / 2	E.g., climate remains confined to geography/natural sciences, while migration is addressed in social science subjects	Horizontal integration of subject curricula and shared learning outcomes	Develop interdisciplinary teaching units on climate migration
Climate Justice	Students understand unequal exposure to climate risks, differing adaptive capacities, and the distributive/global dimension of climate justice	Poverty, inequality, Global South, gender, children and young people, human rights; explicit/implicit climate justice	Empirical finding	0 / 1 / 2	E.g., the impacts of climate change are presented as universal, without addressing social inequalities	Introduce vulnerability, responsibility, historical inequalities, and differing adaptive capacities	Integrate a *climate justice* perspective into the teaching of mobility
Scientific Grounding	A deterministic "climate change → migration" model is avoided; mobility is explained as a multicausal	Ways in which the topics are connected; climate as one of multiple drivers; socio-environmental crisis; terminology used	Empirical finding	0 / 1 / 2	E.g., migration is presented as a direct consequence of climate disasters	Introduce economic, political, social, and demographic mediating factors	Teach climate mobility as a complex and context-dependent process

Benchmark Dimension	Expected UN Standard	Indicators from Curriculum Analysis	Status in the Curriculum	Level of Alignment with UN Standards	Identified Gap	Opportunity for Curriculum Improvement	Basis for Recommendation
	process						
Climate Mobility and Migration Literacy	Distinctions are made between migration, displacement, mobility, and other forms of movement, as well as between slow- and sudden-onset processes	Concepts used; climate/environmental migration; displacement; mobility	Empirical finding	0 / 1 / 2	E.g., all forms of mobility are labelled "climate refugees"	Clarify terminology and different forms of mobility	Develop terminologically and conceptually precise *migration literacy*
Migration as Adaptation and Human Agency	Migrants are not portrayed solely as passive victims; mobility can also be understood as an adaptation strategy	Migrants portrayed as victims / threats / agents of adaptation; dominant narrative	Empirical finding	0 / 1 / 2	E.g., dominant victimisation or securitisation	Incorporate agency, adaptation, and resilience	Balance vulnerability and agency perspectives
Human Rights and Inclusion	Climate mobility is linked to human rights, education, social inclusion, and the protection of vulnerable groups	Human rights; educational inclusion; humanitarian framework; children and young people	Empirical finding	0 / 1 / 2	E.g., the human rights dimension is absent	Rights-based case studies and problem-based content	Integrate a human rights framework into the teaching of climate mobility
Critical Thinking and Multiperspectivity	Students analyse different interpretations, interests, policies, and perspectives	Critical discussion; critical thinking; debate; research activities	Empirical finding	0 / 1 / 2	E.g., students are presented with predetermined claims without opportunities to question them	Introduce controversial issues, comparison of perspectives, and evidence-based discussion	Teach climate migration as a complex societal issue
Media and Information Literacy	Students critically evaluate media representations, data, stereotypes, and misinformation related to climate and migration	Media analysis; digital content; data analysis; dominant narratives and sentiment	Empirical finding	0 / 1 / 2	E.g., media are used only as sources of content rather than as objects of critical analysis	Analysis of news, social media, visual representations, and data	Integrate *media and information literacy* into climate migration education
Transformative and Participatory Pedagogy	Learning incorporates case studies, data, scenarios, discussions, project-based work, and research activities	Recommended teaching methods; media used; problem-based tasks	Empirical finding	0 / 1 / 2	E.g., predominantly teacher-centred/information-based instruction	Case studies, role-play, simulations, digital media, project-based work	Develop participatory and problem-oriented teaching media

Source: Authors of the analysis

Based on the gaps and shortcomings identified in the curricula, the final stage of the analysis involved the development of recommendations for curriculum improvement.

2. COMPARATIVE ANALYSIS OF UN DOCUMENTS AS A BASIS FOR DEVELOPING A SECONDARY SCHOOL CURRICULUM ON CLIMATE MIGRATION

A comparative analysis of five selected documents published by UNESCO and the International Organization for Migration (IOM) was conducted with the aim of identifying content-related, value-based, and pedagogical and didactic elements relevant to the development of a secondary school curriculum on climate migration. The documents analysed were the *UNESCO Global Education Monitoring Report 2019: Migration, Displacement and Education: Building Bridges, Not Walls*, *The Impact of Climate Displacement on the Right to Education*, the South-Eastern Europe regional synthesis *Climate Change, Displacement and the Right to Education*, *Learning at Risk – The Impact of Climate Displacement on the Right to Education*, and the IOM's 2024 *World Migration Education Toolkit*. The documents were compared across six dimensions relevant to the development of an educational model: cognitive, socio-emotional, behaviour/action, interdisciplinarity, climate justice, and scientific grounding. The analysis reveals a high degree of complementarity among the documents, while also demonstrating the different functions they may serve in constructing an ideal curriculum. UNESCO documents primarily provide a normative, human rights-based, developmental, and policy framework, whereas the IOM's *World Migration Education Toolkit* represents the most elaborated pedagogical and didactic model. Consequently, no single document contains all the elements of an ideal climate migration curriculum. Nevertheless, the IOM Toolkit comes closest in terms of its structure and the operationalisation of educational objectives and can therefore be regarded as the primary content and pedagogical benchmark, to be complemented by specific elements that are more strongly represented in UNESCO documents. This assessment also derives from the intended purpose of the IOM document itself. Unlike most of the other sources analysed, the *Toolkit* is not primarily an analytical or policy report that can subsequently be used for educational purposes, but rather an educational resource explicitly designed for secondary school teachers and students. It is based on research and analyses from the *World Migration Report* series, has undergone expert review in the fields of education and migration, and is structured to guide students progressively from fundamental migration concepts towards more complex problem areas. Its pedagogical value derives particularly from its combination of teacher guides, problem-based questions, text- and data-based case studies, and interactive scenarios based on real-world situations.

2.1. Cognitive Dimension: From Climate Literacy to Understanding the Multicausality of Migration

Within the cognitive dimension, the documents reveal a clear progression from a general understanding of migration and displacement towards a complex understanding of the relationship between climate change and human mobility. The *Global Education Monitoring Report 2019* incorporates climate-related factors into the broader context of migration and displacement and distinguishes between the consequences of sudden-onset disasters and gradual environmental change. Its principal value lies in situating migration within a broader social, political, economic, and educational context, although climate migration is not developed as a distinct

field of learning. A considerably more developed conceptual framework is provided by UNESCO documents specifically addressing climate displacement and the right to education. *The Impact of Climate Displacement on the Right to Education* systematically distinguishes between internal and cross-border mobility, temporary and permanent mobility, sudden- and slow-onset climate processes, planned relocation, and the issue of populations that are unable to migrate. Of particular importance is its rejection of a simplified causal model according to which climate change automatically produces migration. Instead, climate mobility is interpreted as the outcome of interactions between environmental, economic, social, political, and other factors. The regional analysis for South-Eastern Europe further contextualises these relationships through poverty, agriculture, urbanisation, livelihood security, and previous experiences of displacement, while *Learning at Risk* provides the most comprehensive connection between climate literacy, the education system, and the right to education. Multicausality is also one of the key strengths of the IOM model. Climate migration is not presented as an isolated category but is embedded within a broader understanding of human mobility. The first part of the Toolkit therefore begins with six fundamental questions: what migration is, who migrates, why, where, how, and when people migrate. Only in the second part does it move on to thematic areas, including Module 7, which is dedicated to climate change and migration. This structure serves an important educational function: students first develop migration literacy and subsequently situate climate migration within the broader spectrum of the drivers, forms, and consequences of mobility. The IOM defines climate migration as a subcategory of environmental migration and emphasises that it can increase vulnerability, particularly when it is forced, while at the same time it can represent a strategy for adapting to environmental pressures and strengthening resilience. The inclusion of immobility represents a particularly important corrective to climate determinism: poorer and more vulnerable populations may be more severely affected by climate change, yet precisely because they lack economic and other resources, they may be unable to migrate. The IOM explicitly cautions that climate change does not necessarily result in increased mobility and distinguishes between voluntary and involuntary immobility. From the perspective of an ideal curriculum, it follows that cognitive learning outcomes should not be limited to knowledge of definitions. **Students should be able to explain the multicausality of climate migration, distinguish between different types of climate processes and forms of mobility, relate climate risks to vulnerability and adaptive capacities, and critically assess claims about future "waves of climate migrants".**

2.2. Socio-Emotional Dimension: Empathy without the Victimisation of Migrants

The socio-emotional component is strongly represented across all UNESCO documents, although in different ways. The *Global Education Monitoring Report 2019* emphasises solidarity, openness to diversity, social cohesion, non-discrimination, and the combating of stereotypes. Documents focusing on climate displacement add a human rights perspective and responsibility towards particularly vulnerable groups. *Learning at Risk* goes a step further by linking education on climate displacement with empathy, acceptance of diversity, the reduction of xenophobia, and youth empowerment. For an ideal curriculum, it is particularly important to strike a balance between fostering empathy and avoiding a paternalistic representation of climate migrants exclusively as passive victims. In this respect, the IOM provides a useful corrective. Case studies, data, and interactive scenarios enable students to perceive

migrants as actors who make decisions within specific structural constraints. Socio-emotional learning outcomes in the *Toolkit* are not formalised as explicitly as cognitive outcomes, but they emerge from its multiple perspectives and activities and from the linking of individual experiences with social structures. An ideal curriculum should therefore foster empathy, solidarity, and a sense of global interconnectedness while simultaneously enabling students to understand migrants as autonomous decision-making actors rather than as objects. **Climate mobility should not be reduced to images of disaster and helpless victims. Students should understand that migration can be forced, but can also constitute an anticipatory or adaptive strategy, and that the ability to make decisions about whether to stay or leave represents an important dimension of human dignity.**

2.3. From Knowledge to Action: Developing Competences for Action

The greatest differences among the documents emerge in the dimension of behaviour and action. UNESCO documents provide numerous recommendations for states, international organisations, and education systems, but they are not equally successful in translating these recommendations into activities undertaken by students themselves. The *Global Education Monitoring Report 2019*, for example, strongly develops the policy dimension and critical thinking but does not establish a systematic model of participatory student action. *Learning at Risk* and the regional analysis for South-Eastern Europe move closer to educational operationalisation by advocating the integration of Education for Sustainable Development (ESD) into curricula, teacher education, and youth participation. In this way, students cease to be viewed merely as recipients of knowledge and become potential participants in societal responses to climate challenges. It is precisely in this area that the advantage of the IOM *Toolkit* is most evident. Interactive scenarios constitute a core element of its curricular approach, with students applying migration concepts to real-world situations through role-play and problem-solving. In Module 7, for example, students analyse specific national and regional policies related to climate change, disasters, and migration; develop a profile of a country or region; connect environmental processes, ecosystem services, and drivers of mobility; and assess the extent to which existing policies respond to the needs of the population. Finally, they are expected to discuss whether the policies analysed are inclusive and oriented towards human well-being and to present the results of their work. Such a model provides a valuable framework for the KlimEd curriculum because it facilitates a transition from "knowing" towards "being able to analyse, evaluate, and act". **An ideal curriculum should therefore incorporate problem- and project-based learning, the analysis of data and media content, decision-making simulations, debates, role-play, and the development of public policy proposals.** Action should not, however, be understood as prescribing a politically or normatively "correct" response, but rather as developing the competence for reasoned, informed, and democratic participation.

2.4. Interdisciplinarity and Climate Justice as Integrative Principles

All the documents analysed confirm that climate migration cannot be adequately taught within the boundaries of a single school subject. UNESCO documents link climate displacement with the environment, poverty, agriculture, urbanisation, the labour market, health, human rights, gender, ethnicity, education, and public policy. The IOM further connects environmental change with ecosystem services, food and

water security, economic, personal, and political security, conflict, and urbanisation. Module 7 explicitly links slow-onset climate processes, such as sea-level rise, changes in precipitation patterns, and droughts, with pressures on livelihoods and the availability of food and water, while insisting that migration decisions result from multiple interconnected factors. An ideal curriculum should therefore be interdisciplinary not merely in a formal sense, by incorporating content from geography, sociology, politics, economics, or ecology, but also in a problem-oriented sense: students should be able to analyse the same phenomenon of climate migration from multiple perspectives and understand the interconnections among them. Climate justice is an area in which UNESCO documents particularly strongly complement the IOM's pedagogical model. *The Impact of Climate Displacement on the Right to Education* and *Learning at Risk* particularly emphasise the unequal distribution of climate risks, differences in adaptive capacities, and the fact that populations that have contributed least to climate change may bear its most severe consequences. The regional analysis for South-Eastern Europe adds poverty, gender and ethnic inequalities, secondary displacement, and the specific vulnerabilities of previously displaced persons to this perspective. In curricular terms, climate justice should therefore not constitute a separate concluding topic but rather a transversal principle running throughout the entire programme. **Students should examine who is exposed to climate risks, who has the resources to adapt or migrate, who is able to remain, who is compelled to leave, and how gender, age, socioeconomic status, place of residence, and other social characteristics shape these possibilities.**

2.5. Scientific Grounding and Media Literacy

The comparative analysis indicates a high level of scientific grounding across most of the documents, but it is the IOM *Toolkit* that provides the clearest model for translating scientific knowledge into secondary school teaching. The document draws on the *World Migration Report*, international statistical sources, and relevant research, but does not present data merely as facts to be memorised. Students work with graphs, migration statistics, case studies, and primary sources, compare data, and draw conclusions. The IOM also draws attention to data limitations. For example, in its analysis of youth migration, it explicitly identifies problems related to inconsistent definitions and insufficient age disaggregation in certain migration statistics. Such an approach is particularly important in the context of climate migration because of the widespread presence of simplified, sensationalist, and deterministic narratives in the public sphere. Scientific literacy within an ideal curriculum should therefore include the ability to distinguish between data, estimates, scenarios, and projections and to recognise their methodological limitations. Students should understand why it is not possible simply to calculate the number of future "climate migrants" and why climate-related factors must be analysed in relation to other drivers of mobility. This also creates an important connection with media literacy. In addition to climate change, the IOM *Toolkit* contains a separate module on misinformation about migration, enabling scientific literacy to be linked with the critical analysis of public and media narratives. In an ideal climate migration curriculum, such a component should be integral: **students should not only be familiar with scientific facts but should also be able to assess how scientific knowledge about climate migration is selected, simplified, framed, or misrepresented through misinformation in public communication.**

2.6. The IOM Toolkit as a Curricular Model and Its Enhancement through UNESCO Frameworks

The findings of the comparative analysis indicate that the *World Migration Education Toolkit* represents the most suitable direct model for structuring a secondary school curriculum on climate migration. Its principal strength lies not only in the quality of its content but also in the curricular operationalisation of knowledge. The modules include clearly defined learning outcomes, suggested duration, teaching materials, introductory activities, case studies, data analysis, interactive scenarios, assessment methods, and expected evidence of learning. For example, even the introductory module specifies what students should be able to define and distinguish after completing the lesson, provides for a duration of one to two class periods, offers several assessment options, and includes a final group assignment, an oral presentation, and a written reflection. The module on climate change and migration then defines specific learning outcomes: students should be able to explain the relationship between climate change and migration, the effects of slow-onset climate processes on mobility, the links between food insecurity and migration, and the public policy implications of environmental change and human mobility. However, an ideal climate migration curriculum should be more ambitious than simply adopting Module 7. UNESCO documents demonstrate considerable potential for complementing and expanding the IOM framework. Above all, climate justice and the right to education should be more strongly operationalised, socio-emotional learning outcomes should be defined more explicitly, intersectional vulnerabilities should be systematically incorporated, and youth participation and competences for action should be further developed. The regional UNESCO perspective on South-Eastern Europe is of particular value because it makes it possible to bring this global issue closer to the experiences and socio-geographical context of students in Croatia. This points towards a model in which the IOM provides the didactic foundation, while UNESCO documents provide its normative and transformative enhancement. The IOM model can contribute the modular structure, learning progression, problem-based pedagogy, work with data, case studies, interactive scenarios, and learning outcome assessment; UNESCO can contribute a stronger emphasis on the right to education, climate justice, intersectionality, solidarity, youth participation, and Education for Sustainable Development.

3. BENCHMARK COMPARISON OF NATIONAL CURRICULA WITH THE IDEAL MODEL OF SECONDARY SCHOOL EDUCATION ON CLIMATE MIGRATION

A benchmark (comparative) analysis of the national curricula of Croatia, Slovenia, Hungary, the Czech Republic, and Slovakia was conducted against the previously developed “ideal” model of secondary school education on climate migration. This model takes the IOM’s *World Migration Education Toolkit* as its core content and pedagogical framework, complemented by elements from UNESCO documents that place greater emphasis on climate justice, human rights, educational inclusion, intersectional vulnerability, youth participation, and Education for Sustainable Development. The IOM model is particularly relevant because of its modular structure and its use of case studies, data analysis, and interactive scenarios, while UNESCO documents expand its normative and transformative potential. Twelve benchmark areas were defined for the comparison: the cognitive and socio-emotional

dimensions, behaviour/action, interdisciplinarity, climate justice, scientific grounding, climate mobility and migration literacy, migration as adaptation and human agency, human rights and inclusion, critical thinking and multiperspectivity, media and information literacy, and transformative and participatory pedagogy. The overall results of the comparison indicate that the national curricula analysed contain numerous individual elements compatible with the ideal model, but that these elements are generally not integrated into a coherent educational framework on climate migration. The most pronounced common gap is fragmentation: climate change is most frequently addressed within geography, biology, chemistry, physics, or cross-curricular environmental topics, while migration is situated within geography, history, civic education, sociology, ethics, or topics related to cultural diversity. Explicit connections between the two are rare. The principal challenge, therefore, is not necessarily the complete absence of relevant content, but rather the lack of a curricular mechanism capable of integrating existing content into a comprehensive understanding of the *climate–migration nexus*.

3.1. Cognitive Dimension: The Topics Are Present, but They Are Not Connected

According to the ideal model, students should understand the causes, processes, and consequences of climate migration, as well as the complexity of the relationship between climate and mobility. In the curricula analysed, this relationship represents one of the weakest areas. Within the Croatian corpus, climate change appears in a larger number of natural science and geography curricula than migration, while direct connections between the two topics are exceptional. Geography stands out in particular, as it explicitly includes the concept of climate-induced population migration and recognises climate-related factors as one of the drivers of migration. This represents an important starting point, but remains an isolated example that is not horizontally connected with other subjects. A similar pattern can be observed in the other countries. The Czech Republic has a very high presence of both topics, but they are almost systematically addressed separately; in Slovakia, the connection between them is even weaker. Hungary contains several valuable exceptions in which climate change is linked to migration as one of the consequences of crisis situations. Slovenia displays the largest number of examples of explicit or partial integration, including content on environmental migrants and the analysis of migration from the perspective of climate change and other factors. In relation to the ideal model, there is therefore a clear cognitive gap between the presence of relevant content and an understanding of the relationships among that content. Improvement does not necessarily require the introduction of an entirely new subject, but rather the formulation of shared cross-curricular learning outcomes according to which students should be able to connect climate processes with economic, political, social, and demographic drivers of mobility. This would transform existing knowledge about climate and migration from parallel topics into an integrated understanding of a complex process. If, however, a decision were made to address this topic within a single subject, geography would be the most logical choice, as it is also specifically identified by the IOM in its *Toolkit*.

3.2. Socio-Emotional Dimension: Values Are Present, but Rarely in the Context of Climate Mobility

The ideal model assumes the development of empathy, solidarity, a sense of global interconnectedness, responsibility, and justice. National curricula relatively frequently

incorporate such values, particularly in civic education, ethics, philosophy, languages, and intercultural education. However, these values are generally not linked to climate migration. Czech curricula, for example, frequently situate migration within the context of cultural diversity, majority–minority relations, stereotypes, and prejudice. In Croatia, some curricula connect migration with human rights, asylum, discrimination, and multiculturalism. Slovenia has the broadest range of socio-emotional elements, including empathy, solidarity, environmental responsibility, and even climate anxiety. In Hungary, some content includes sensitisation towards people affected by crises, whereas socio-emotional approaches are generally less strongly represented in Slovakia. The principal gap is therefore not the absence of value-based learning outcomes, but their separation from climate mobility. It would be advisable to incorporate personal narratives, case studies, and multiperspective scenarios in which students analyse the experiences of people exposed to climate risks without reducing them to passive victims. This would directly connect existing learning outcomes related to tolerance, solidarity, and respect for diversity with climate migration.

3.3. Behaviour and Action: Potential Exists, but Is Not Directed towards Climate Mobility

The ideal model moves from *learning about* towards *learning for action*: students should analyse public policies, societal responses, and opportunities for action and participate in discussions about potential solutions. National curricula contain elements of project-based learning, discussion, research, simulation, and civic engagement, but these are very rarely linked specifically to climate migration. Slovenian and Hungarian curricula demonstrate the greatest potential in this respect, with project work, debates, research, data collection, simulations, and problem-based tasks envisaged in several areas. In Croatia, similar methods appear in geography, ethics, and certain natural science subjects. Czech curricula have a stronger value-based and civic component, although teaching methods are often insufficiently specified. Slovakia largely remains focused on knowledge and understanding, with relatively few explicitly participatory methods. Improvement could be achieved through the introduction of IOM-type interactive scenarios: a simulation of a local council deciding on the reception of displaced people, an analysis of a national adaptation strategy, the development of a plan for a climate-vulnerable community, or a debate on the equitable distribution of resources. The IOM places precisely such interactive scenarios based on real-world situations at the core of its educational model.

3.4. Interdisciplinarity: The Greatest Potential and One of the Largest Gaps

The ideal model understands climate migration as an environmental, social, economic, political, developmental, and human rights phenomenon. National curricula contain almost all the necessary content components, but these are distributed across different subjects without sufficient connections between them. The Czech Republic and Croatia provide the clearest examples: climate change is primarily situated within environmental or natural science areas, while migration is addressed within the social sciences and humanities. Slovenia demonstrates the greatest interdisciplinary openness, as climate-related topics appear in the natural sciences, social science subjects, ethics, arts, psychology, digital competences, and sustainable development.

Hungary also shows a broad distribution across subjects, although this does not automatically result in integration. Slovakia remains more strongly segmented by subject. The most important curricular intervention would therefore be the development of horizontal cross-curricular learning outcomes and shared teaching units. A single climate migration topic could connect geography through climate risks and spatial patterns, biology through ecosystems, sociology through inequalities, politics through migration regimes, ethics through questions of justice, and media literacy through public discourses.

3.5. Climate Justice: The Most Systematically Absent Dimension

Climate justice represents one of the most evident gaps in national curricula. The ideal model requires an understanding of unequal exposure to climate risks, differences in adaptive capacities, global inequalities, and responsibility. In the Czech Republic and Slovakia, climate justice is virtually absent as an explicit concept. In Croatia, it appears directly in only a limited number of documents, while implicit connections with social justice, poverty, or solidarity are more common. Hungary contains several implicit elements related to unequal access to resources and global responsibility. Slovenia goes furthest in this respect, with environmental and intergenerational justice and environmental inequality explicitly appearing in certain curricula. This area requires more explicit development. Students should analyse why individuals and communities are not equally exposed to climate risks, why they do not have equal opportunities to adapt or migrate, and how historical, economic, and political inequalities translate into different levels of climate vulnerability. Climate justice should not be treated as a separate lesson, but rather as a transversal perspective embedded throughout the curriculum.

3.6. Scientific Grounding: The Need to Systematically Counter Climate Determinism

The benchmark standard rejects the simplified "climate change → migration" model and understands migration as a multicausal process. National curricula generally do not make explicitly deterministic claims, but the problem arises from their fragmentation: when a connection between climate and migration does appear, it often remains at the level of a brief cause-and-effect statement. Positive examples can be found in Slovenia, Hungary, and Croatia, where some geography content situates climate-related factors among multiple drivers of migration. However, most documents lack economic, political, social, and demographic mediating factors. Improvements should include explicit teaching of multicausality, the distinction between correlation and causation, and the limitations of migration projections. Students should understand that the same climate event may result in migration, temporary displacement, planned relocation, or populations remaining in place, depending on the social context.

3.7. Climate Mobility and Migration Literacy: Terminological Precision Is Generally Insufficient

The ideal model distinguishes between migration, displacement, and broader forms of mobility, as well as between sudden- and slow-onset climate processes. Such terminological sophistication is generally absent from national curricula. Migration is

most often taught as a general demographic category, with distinctions made between internal and international migration or between economic and political migration. The concepts of environmental or climate migration are very rare. Croatia contains an isolated example of "climate-induced population migration", Slovenia introduces "environmental migrants" and content addressing climate-related mobility, while in the Czech Republic and Slovakia distinct terminology is virtually absent. There is therefore a need to develop clear *migration literacy*: students should be able to distinguish between a migrant, a displaced person, a refugee, internal displacement, planned relocation, environmental migration, and climate migration, and to explain why the term "climate refugee" can be legally and conceptually problematic.

3.8. Migration as Adaptation and Human Agency: The Dominance of Descriptive or Victimising Frames

The ideal model requires a balance between vulnerability and human agency: migration can also constitute an adaptation strategy, and migrants are not merely passive victims. This dimension is particularly underdeveloped in national curricula. In the Czech Republic and in much of the Croatian curriculum, migrants are generally represented in neutral and descriptive terms, as a demographic or social group; elsewhere, they appear in the context of asylum, human rights, or integration challenges. Slovak curricula likewise remain predominantly descriptive. Only some Slovenian and Hungarian content enables an understanding of migrants as active agents. It would therefore be advisable to incorporate case studies in which migration represents an individual, family, or community adaptation strategy, while simultaneously examining its limitations. This would help avoid both the victimisation of migrants and the romanticisation of migration as an invariably successful form of adaptation.

3.9. Human Rights and Inclusion: A Migration Component Is Present, but the Climate Link Remains Weak

In the ideal model, climate mobility is directly connected with human rights, education, social inclusion, and the protection of vulnerable groups. National curricula address human rights relatively well, but almost never within the specific context of climate migration. Croatian, Czech, and Slovenian social science and humanities curricula include topics such as asylum, discrimination, cultural diversity, minorities, and human dignity. Hungarian and Slovak documents address these issues less systematically. The principal gap is the absence of consideration of what happens to rights and access to education, healthcare, housing, or social protection when mobility is associated with climate and environmental change. The UNESCO enhancement of the ideal model is particularly important in this respect: human rights-based case studies should direct students' attention towards the rights of displaced persons, children, and young people, as well as the obligations of states and education systems.

3.10. Critical Thinking, Multiperspectivity, and Media and Information Literacy

Critical thinking is relatively well represented as a general curricular objective, particularly in Slovenia, Croatia, and the Czech Republic. Numerous documents envisage discussion, source analysis, and argumentation. However, the ideal standard

requires students to analyse different interpretations, interests, and policies specifically within the context of climate migration. Such application remains rare. The gap is even more pronounced in the area of media and information literacy. The ideal model requires the critical evaluation of media representations, data, stereotypes, and misinformation concerning climate and migration. National curricula frequently use digital content, newspaper articles, online sources, or statistical data, but media are much more often used as teaching resources than treated as objects of critical analysis. In this respect, the IOM model provides a particularly important enhancement because, in addition to climate change, it includes a separate module on misinformation about migration. An ideal enhancement of national curricula should include comparative analyses of news reports about "climate refugees", verification of numerical projections, analysis of visual representations of migrants, and differentiation between misinformation, misinterpretation, and legitimate scientific uncertainty.

3.11. Transformative and Participatory Pedagogy: Good Methods Exist, but an Integrated Model Is Lacking

The final benchmark area brings together the preceding dimensions: ideal teaching combines case studies, data, scenarios, discussions, project-based learning, and research activities. The analysis indicates that national curricula already incorporate many of these methods, particularly in Slovenia and Hungary, and in certain subjects in Croatia. Czech and Slovak curricula specify them to a lesser extent. The problem lies in the lack of systematic integration. Project-based learning exists, climate change is addressed, migration is addressed, and critical thinking is promoted, but these elements rarely converge within a single teaching unit. The most practical approach to improvement would therefore be the development of modular teaching media that could be incorporated into existing subjects without requiring major reform of national curricula.

3.12. Overall Assessment and Directions for Improvement

The benchmark analysis indicates that none of the five national systems analysed fully corresponds to the enhanced IOM–UNESCO model, although differences among them are evident. Slovenian curricula demonstrate the broadest correspondence with elements of the ideal model, primarily due to greater interdisciplinarity, more explicit treatment of the social dimensions of climate change, several examples linking migration and climate, the inclusion of climate and environmental justice, and participatory approaches. The Hungarian system contains several substantive and explicit links between climate and migration, as well as relatively well-developed active teaching methods, although these are dispersed across a large number of documents. Croatia has an important advantage in the explicit inclusion of climate migration in the geography curriculum and provides strong foundations in sustainable development, human rights, and critical thinking, but the overall system remains highly fragmented. The Czech Republic demonstrates a broad presence of both core topics and a strong emphasis on cultural diversity and civic education, but the separation of climate and migration is almost the rule. Slovakia displays the largest number of gaps, particularly in climate justice, interdisciplinary integration, migration literacy, and participatory pedagogy. The most important finding, however, is not a ranking of countries, but the fact that the same structural problem recurs across all the

systems analysed: there is a substantial body of "curricular material" from which education on climate migration could be developed, but an integrative logic capable of connecting these elements is lacking. This deficiency has the characteristics of an **intersectional curricular gap**. The recommendation should therefore not focus solely on adding new content on "climate migration", but rather on establishing a cross-curricular model that connects existing learning outcomes. Such a model should include shared learning outcomes through which students understand the multicausality of climate mobility; distinguish terminologically between different forms of migration, displacement, and immobility; understand climate justice and intersectional vulnerability; perceive migrants through the dual perspectives of vulnerability and agency; connect climate mobility with human rights; analyse public policies and different societal perspectives; critically evaluate data and media narratives; and apply acquired knowledge through problem-based, project-based, and participatory learning. This entails not creating another separate block of content, but rather connecting existing, currently largely separated curricular components into a coherent interdisciplinary educational framework on climate migration. The IOM *Toolkit* provides the operational didactic architecture, while UNESCO elements ensure that such a model does not remain at the level of factual knowledge about migration and climate, but incorporates climate justice, human rights, inclusion, youth participation, and transformative learning. Such a combination would most directly address the gaps identified across all twelve benchmark areas.

4. TOWARDS A MODEL OF AN IDEAL CURRICULUM ON CLIMATE MIGRATION

Based on the analysis, several fundamental characteristics of an ideal curriculum can be identified. It should begin with general migration and climate literacy and progressively lead students towards an understanding of their interaction. Climate migration should be presented as a complex, context-dependent, and multicausal phenomenon, with clear distinctions between mobility, displacement, planned relocation, and immobility, as well as between sudden- and slow-onset climate processes. Migration should not be presented exclusively as a negative consequence of climate change, but also as a potential adaptation strategy, while simultaneously examining the conditions under which such adaptation is voluntary, safe, dignified, and equitable. The curriculum should furthermore develop three interconnected sets of learning outcomes: knowledge and understanding; values and socio-emotional competences; and competences for critical judgement and action. Such a structure would enable students not merely to be informed about climate migration, but also to understand the perspectives of people affected by climate change, critically assess data and public narratives, recognise inequalities and power relations, and engage in evidence-based discussion of possible societal and public policy responses. Finally, the comparison demonstrates that an ideal curriculum cannot be constructed simply by adopting a single existing international document. The IOM's *World Migration Education Toolkit* represents the strongest existing content and pedagogical framework, but its full potential for climate migration education can only be realised by integrating it with UNESCO's approaches to climate justice, human rights, the right to education, intersectional vulnerability, and youth participation. Such a synthesis makes it possible to develop a curriculum that is simultaneously scientifically grounded, interdisciplinary, value-conscious, pedagogically applicable,

and oriented towards developing the competences young people need to understand one of the more complex intersectional crises of the contemporary world.