



A CLIMATE LANDSCAPE ANALYSIS FOR CHILDREN IN MOLDOVA



TABLE OF CONTENTS

A CLIMATE LANDSCAPE ANALYSIS FOR CHILDREN IN MOLDOVA

TABLE OF CONTENTS	2
ACKNOWLEDGEMENTS	6
KEY CLIMATE DEFINITIONS	7
ACRONYMS	8
FOREWORD	9
MAPS	12
Map.1 Total hazard exposure	12
Map.2 Children’s vulnerability to climate hazards	13
Map.3 Moldova’s Child Climate Risk Index	14
1. EXECUTIVE SUMMARY	15
1.1. Main findings	15
1.2 Recommendations	16
1.2.1 Overall recommendations	16
1.2.2 Sector specific recommendations	16
a. WASH	16
2. INTRODUCTION	21
3. CLIMATE CHANGE	23
3.1 The current climate	23
3.2 Observed changes	23
3.2.1 Changes in temperature	23
3.2.2 Changes in Rainfall patterns	23
Water scarcity	23
3.2.1 Flooding	24
3.3 Projected changes	25
3.3.1 Rising temperatures	25
3.3.2 Changes in rainfall patterns	25
Drought	25
4. OTHER ENVIRONMENTAL ISSUES	27
4.1 Air pollution	27

	29
4.2 Land and water degradation	29
4.2.1 Forest loss	30
4.2.2 Soil and water pollution	31
5. ENERGY PRODUCTION AND ACCESS	34
5.1 An overview	34
5.3 Traditional energy	36
5.4 Renewable energy	37
5.4.1 Biomass	37
5.4.2 Solar energy	38
5.4.3 Wind Energy	39
6. THE IMPACT OF CLIMATE, ENVIRONMENT AND ENERGY ISSUES ON CHILDREN	41
6.1 An overview	41
6.2 Water, Sanitation and Hygiene (WASH)	42
6.2.1 An overview	42
6.2.2 WASH impacts	42
a. Changes in water supply	42
	42
b. Safety impacts	43
Faecal contamination	43
Chemical contamination	46
Microplastics	47
c. Impacts on dignity and wellbeing	47
6.3 Health	48
6.3.1 Overview	48
6.3.2 Health impacts	49
a. Extreme hot and cold temperatures	49
Extreme heat	49
b. Death and injury from climate-related disasters	49
c. Air pollution	50
d. Vector-borne disease	51

e. Infectious disease	51
Water-borne disease	51
Food-borne disease	52
©UNDP Moldova	52
6.4 Food security and nutrition	52
6.4.1 Food security	52
6.4.2 Undernutrition	53
An overview	53
Climate-related impacts	54
6.5 Education	55
6.5.1 An overview	55
6.5.2 CEE impacts on education	56
6.5.3 Education to tackle CEE issues	56
6.6 Child protection	58
6.6.1 An overview	58
UNICEF distribution of WASH supplies to Roma families during the COVID-19 pandemic	
©UNICEF Moldova	59
6.6.2 vulnerable children	59
6.6.3 Child marriage	60
6.6.4 Child labour	61
6.6.4 Mental health	61
7.GOVERNMENT RESPONSES TO CLIMATE, ENERGY AND THE ENVIRONMENT	63
7.1. An overview	63
7.2 National policy	64
7.2.1 Climate change	64
7.2.2 Energy	65
7.2.3 Other environmental policies	65
7.3 Are policies, plans and strategies child inclusive?	65
National Strategy on Agriculture and Rural Development for the period 2014-2020	70
9. CONCLUSION	72
10.RECOMMENDATIONS	73
10.1 Overall recommendations	73

10.2 Sector specific recommendations	73
11. REFERENCES	78
12. ANNEXES	85
Annex.1 Key CEE issues and their implications for children	85
Annex 2: Partners working in climate, energy and the environment	87

ACKNOWLEDGEMENTS

Author

Emily Bamford, UNICEF Climate Consultant

UNICEF Moldova

Maha Damaj, Representative

Ilija Talev, Deputy Representative

Elena Laur, Monitoring and Evaluation Specialist

Xavier Sire, Social Policy Specialist

Larisa Virtosu, Education Specialist

Alex Petrov, Youth and Adolescent Development Officer

Noor Bakhsh, WASH Specialist

Flore Rossi, Child protection

Angela Munteanu, Communication Officer

Farhad Imambakiev, Social Behaviour Change Specialist

Dragan Markovic, Emergency Coordinator

Children and Youth

UNICEF Youth Climate Advocates

Dumitrita Paladuta

Catalina Plinschi

Ioan Voda Lyceum, Cahul

Vera Carapascal

Nasteal Stanila

Timur Cecati

Traian Onos

Cristian Rogojuanu

Vatavu Radu

Cotihana village school, Cahul

Aliona Cojocar

Chisinau Municipal Youth Center

Catalina Burlacenco

Ecaterina Lisu

Corina Delinschi

Marian Gherasim

Victoria Grigorcea

Madaline Cibotaru

Evelina Neamtu

Marilena Midrigan

Mihaela Andronache

Catalina Suconicova

Government, public institutions and local public authorities

Iordanca-Rodica Iordanov, Minister of the Environment, Ministry of the Environment

Galina Noroce, Air and Climate Change Policies Unit, Ministry of Environment

Liuba Stoianov, National Bureau of Statistics

Maia Banarescu, Child Rights Ombudsperson

Ruslan Cozma, Environmental Agency South

Valeriu Baban, Education Department, Cahul Rayonal Council

Larisa Nistirencu, Iuliana Bulat, Iacobache Evelina, Cahul City Hall

Tatiana Savastn, Environmental Inspection, Cahul

Other partners

Vladimir Ternavschi, EcoVisio

Elena Tacu, EcoVisio

Andrei Isac, Programme Analyst, UNDP

Serge Gruel, Field Coordinator, Solidarites International

KEY DEFINITIONS

Biomass	Plant-based material used as fuel to produce heat or electricity (e.g. wood and charcoal).
Child vulnerability	Childrens’ vulnerability to climate change and other environmental degradation as a result of poverty indicators, including a lack of access to safe housing, WASH, healthcare, adequate nutrition and education.
Children’s Climate Risk Index	An index comprising both exposure to climate hazards and child vulnerability.
Climate change	Climate change refers to long-term shifts in temperatures and weather patterns. These shifts may be natural, but since the 1800s, human activities have been the main driver of climate change, primarily due to the burning of fossil fuels (like coal, oil, and gas).
Climate Adaptation	The process of adjusting infrastructure, systems, services and behaviours to become more resilient to climate hazards and seasonal variabilities. This includes improving the design, siting and operation of health, education and WASH services.
Climate hazard	A climate-related event or trend that may cause loss of life, injury, or other health impacts, including drought, flooding, cyclones, thunderstorms and temperature extremes.
Climate Mitigation	Efforts to reduce or prevent the emission of greenhouse gases from sanitation systems, for example capturing biogas and incorporating renewable technologies into infrastructure, systems and services.
Climate Resilience	This refers to infrastructure, systems, services and behaviours that can survive, adapt, and function in the face of climate-related hazards and seasonal variabilities.
Ecosystem	A functional unit consisting of living organisms, their nonliving environment and the interactions within and between them.
Green technology	Technology that aims to mitigate or reverse the effects of human activity on the environment.
Microplastics	Fragments of any type of plastic less than 5 mm in length. Most are so small that they are invisible to the naked eye. They enter the water, soil and air through plastic litter, cosmetics, clothing, and industrial processes.
National Adaptation Plan (NAP)	This plan helps identify country-specific climate adaptation needs and develops and implements strategies to address them, to protect the most vulnerable communities from the impact of climate change.
Nationally Determined Contributions	This is a climate action plan to cut emissions and adapt to climatic impacts. Each party to the Paris Agreement is required to establish an NDC and update it every five years.
Renewable energy	Any form of energy from solar, geophysical, or biological sources that is replenished by natural processes at a rate that equals or exceeds its rate of use. Examples include solar, wind and geothermal energy.
Youth	Individuals aged between 15 and 24 years old.

Children	Individuals aged between 0 and 17 years old
----------	---

ACRONYMS

CEE	Climate, environment and energy
CLAC	Climate Landscape Analysis for Children
CO	UNICEF Country Office
COP22	The UNFCCC Conference of Parties 22 nd meeting
CP	UNICEF Country Programme
CFS	The Child Friendly Schools Initiative
DRR	Disaster Risk Reduction
EIA	Environmental Impact Assessment
GCF	Green Climate Fund
GCM	Global Climate Model
GEF	Global Environment Facility
GHG	Greenhouse Gas
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
HSS	Health System Strengthening
IAP	Indoor air pollution
INC	Initial National Communication to the UNFCCC
MCC	Millennium Challenge Corporation
NAP	National Adaptation Plan
NAPA	National Adaptation Programme of Action for Climate Change
NDC	Nationally Determined Contribution to the UNFCCC
SNC	Second National Communication to the UNFCCC
UNICEF	United Nations Children's Fund
UNFCCC	United Nations Framework Convention on Climate Change
UNDP	United Nations Development Programme
WASH	Water, Sanitation and Hygiene
WFP	World Food Programme
WHO	World Health Organisation

FOREWORD

The climate crisis is a children's rights crisis. Our country is experiencing record temperatures, water scarcity and flooding like never before. Our seasons are changing and pollution continues to contaminate the air our children breathe and the water they drink.

It is Moldova's poorest children who are the worst affected. They often live in unsafe housing and have the worst access to safe water, food and energy, which leaves them vulnerable to climate hazards such as storms, flooding and drought.

Around 77% of young people surveyed through U-Report reported that climate change had already had an impact on their families. We care deeply about climate change - but cannot tackle the crisis alone. We need support from the Government and organisations such as UNICEF.

We are specifically calling on leaders to:

1. Tackle the energy crisis by reducing our dependence on foreign imports and increasing our use of domestic renewable energy sources. This includes:

- Incentivising businesses to invest in solar, wind and other forms of renewable energy.
- Providing grants to the poorest families to help them improve energy efficiency at home, for example by insulating their homes and investing in more efficient appliances.
- Electrifying the public transportation sector
- Eliminating barriers to affordable electric vehicle ownership, by removing import tariffs, providing tax breaks and credits and investing in public charging infrastructure.

2. Ensure the provision of safe water and sanitation facilities for the poorest families, particularly those in the most hazard-prone areas. This includes:

- Ensuring homes and schools have clean, safer water supply, free from chemical and bacteriological contamination, prioritising communities they still rely on water wells.
- Working with private sector partners (including through voucher schemes) to ensure all homes and schools have access to indoor flush toilets.

3. Strengthen waste management and recycling systems across the country. This includes:

- Ensuring all Moldovans have access to adequate waste collection facilities at home, including recycling bins. Once collected, this waste must then be safely disposed of or recycled, so it does not pollute our environment.
- Investing in biogas capture at waste disposal facilities, as a source of cleaner energy.
- Fully implementing the single-use plastic ban across the country, with penalties for non-compliant businesses.

4. Increase green skills training and employment opportunities for young people. This includes:

- Ensuring high schools, technical colleges and universities provide adequate green skill training to young people.
- Working with the private sector to help increase on-the-job training, paid internships and employment opportunities for young people.

5. Improve the quality of environmental education in schools. This includes:

- Overhauling the way environmental education is taught, making it more relevant, practical and inspiring.
- Revising the curricula and making sure environmental education is integrated across all science subjects from primary school onwards.
- Integrating environmental education teacher training classes at all teacher training colleges.
- Providing teachers with lesson plans and materials, which focus on practical activities, that create an impact, outside of the classroom.
- Ensuring that all digital resources for children are made available in Romanian.

6. Improve environmental data collection, monitoring and research. This includes:

- Increasing local soil moisture monitoring to predict the onset of drought and flooding.
- Ensure water quality is regularly monitored and tested in all schools and communities.
- Ensuring all data and research is made publicly accessible.
- Encouraging public-private collaboration, in collaboration with youth, to promote green climate change research, development, and innovation.

7. Ensure that young people are included in all national, regional and international climate negotiations and decisions. This includes:

- Including young people at all stages of the policy and programme development process. This includes ensuring the most marginalised groups of youth (including the poorest rural youth, roma youth and young people with disabilities) have a seat at the decision-making table.
- Establishing a National Youth Advisory Board for the Ministry of Environment
- Establishing multi-stakeholder climate action networks, bringing together the government, private sector, civil society and youth.

We truly believe that our leaders have the power to create the transformational change required to create a greener, brighter future for Moldova's children.

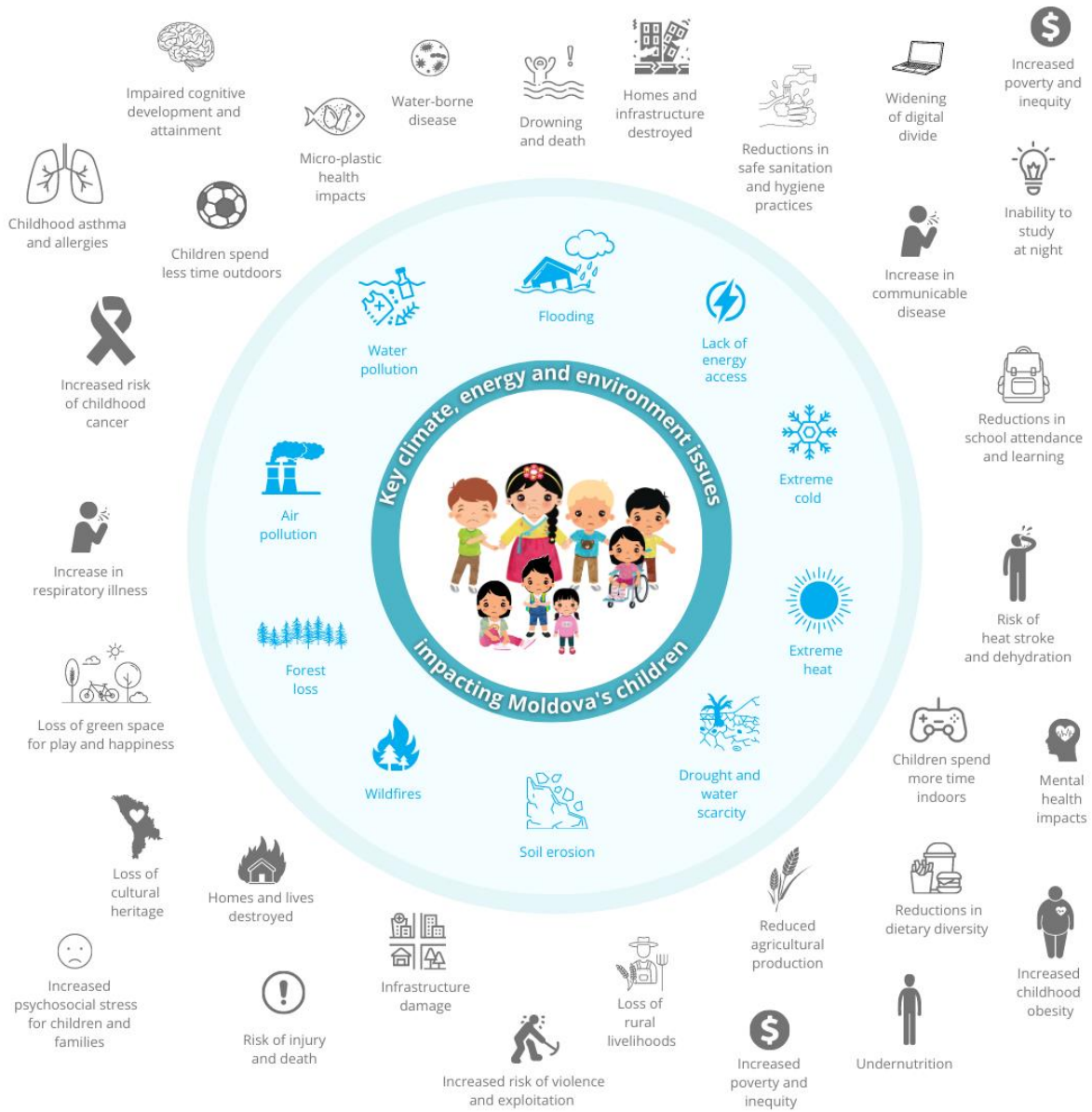
On behalf of Moldova's children, we thank you.

Yours sincerely

Catalina Plinschi and Dumitrita Paladuta



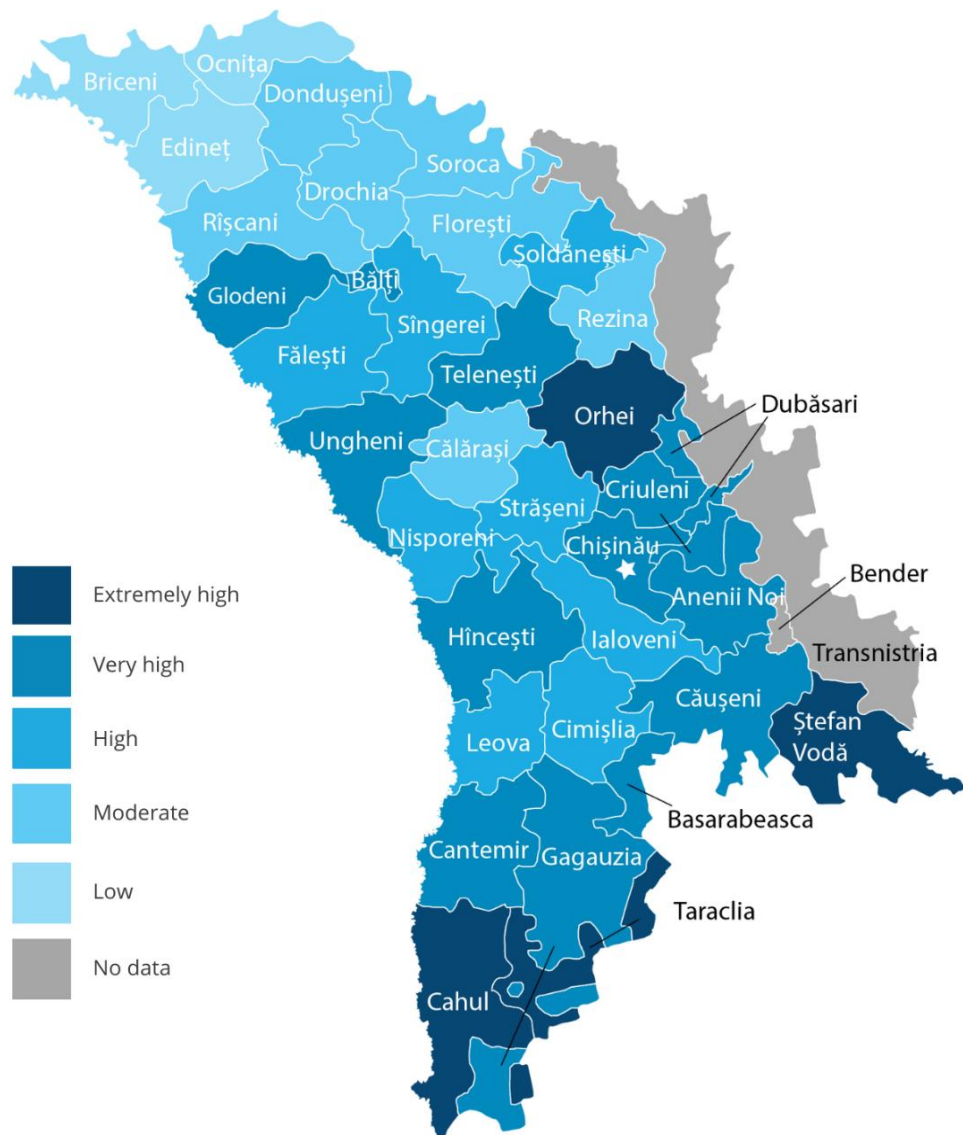
Fig.1 The impacts of Climate, Energy and the Environment on Moldova's children



MAPS

Map.1 Total hazard exposure

The most important climate-related hazards facing Moldova's children are **droughts, flooding (urban and river), air pollution and land degradation**.¹²³⁴⁵ These hazards have been combined to create a total hazard exposure map.



¹ MoARDE (2019) National Drought Plan of the Republic of Moldova

https://www.researchgate.net/publication/336014816_National_Drought_Plan_of_the_Republic_of_Moldova

² Think Hazard (2022) River and Urban Flooding <https://thinkhazard.org/en/report/165-moldova>

³ Think Hazard (2022) River and Urban Flooding (2022) Extreme Heat <https://thinkhazard.org/en/report/165-moldova/EH>

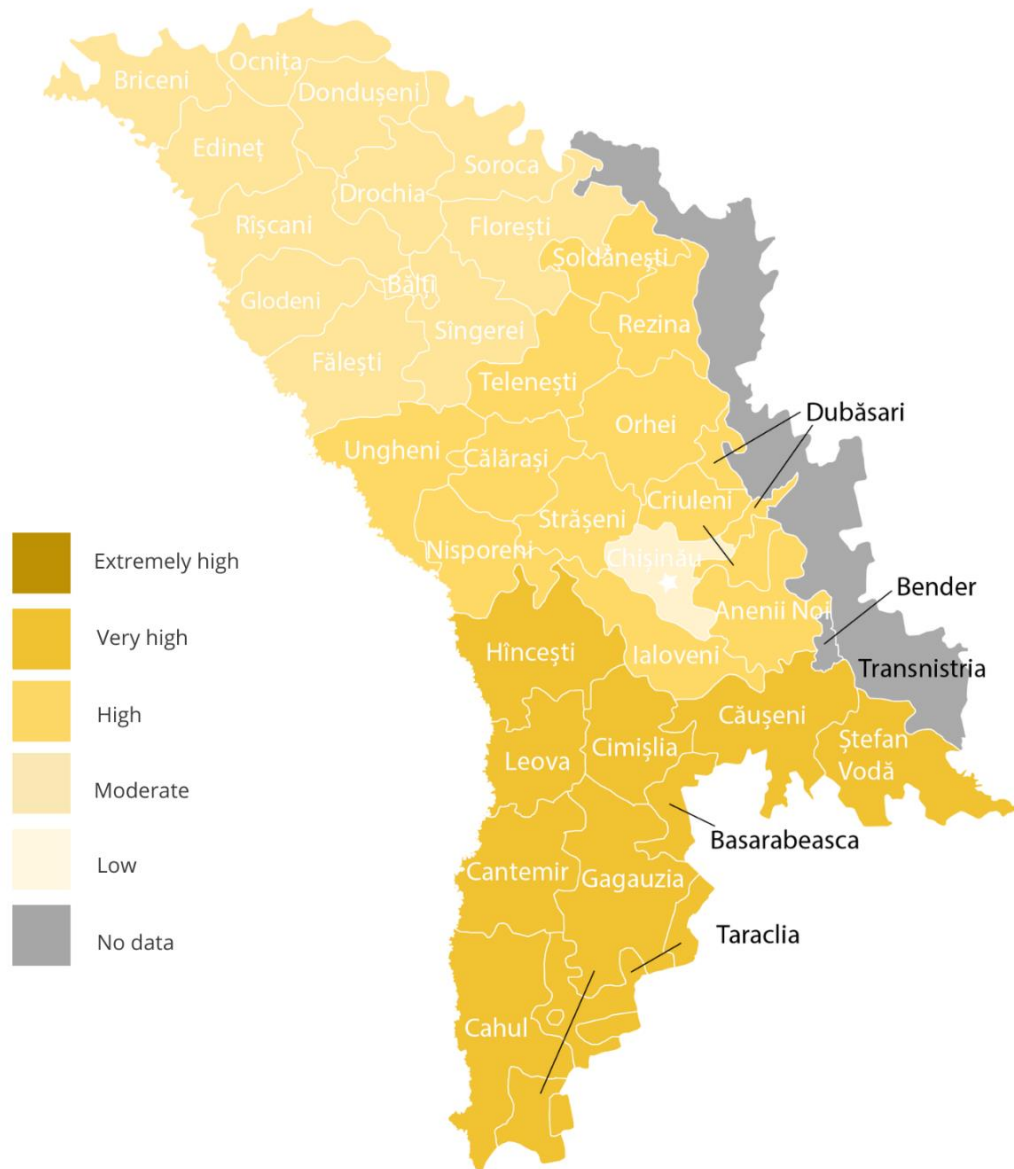
⁴ UNDP (2021) View from space on the air we breathe in Moldova <https://www.undp.org/moldova/news/view-space-air-we-breathe-moldova>

⁵ MoARDE (2019) National Drought Plan of the Republic of Moldova

https://www.researchgate.net/publication/336014816_National_Drought_Plan_of_the_Republic_of_Moldova

Map.2 Children’s vulnerability to climate hazards

Children are more vulnerable to climate hazards (Map.1) when they experience **multidimensional poverty**.⁶ This includes **both absolute and relative poverty**. These poverty indicators have been combined to create a Child Vulnerability to Climate Hazards map below.

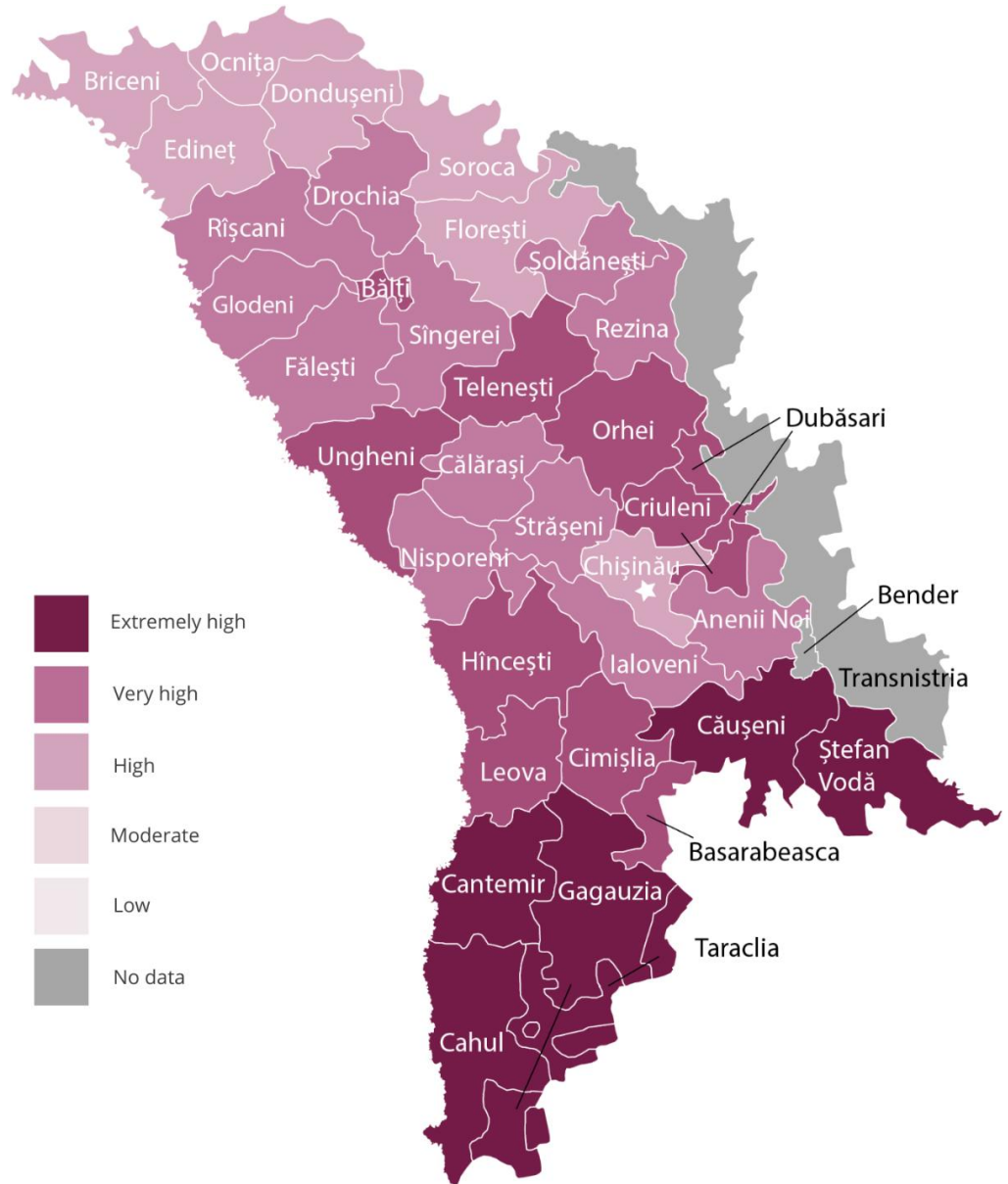


⁶Government of Moldova (2021) Absolute and relative poverty data (by region)

http://statbank.statistica.md/PxWeb/pxweb/en/30%20Statistica%20sociala/30%20Statistica%20sociala_04%20NIV_NIV070/?rxid=b2ff27d7-0b96-43c9-934b-42e1a2a9a774

Map.3 Moldova's Child Climate Risk Index

In the Republic of Moldova, the children facing the greatest climate change risks are the ones who are most exposed to **climate hazards** (Map.1) **and are highly vulnerable** to these hazards, as a result of child poverty (Map.2).





1. EXECUTIVE SUMMARY

Moldova's climate is changing. Temperatures are rising and drought and water scarcity are becoming increasingly common. Many children are inhaling polluted air, ingesting contaminated water and experiencing food insecurity.

The climate crisis infringes on all aspects of children's rights, including their right to safe water, food and a healthy environment. As the impacts become more extreme, more must be done to protect these children, particularly the most vulnerable. However, limited data and research exists on the specific impacts that these issues are having on Moldova's children.

The Climate Landscape Analysis for Children (CLAC) aims to change this, by compiling all the latest data, research and other evidence on the climate and environmental issues affecting Moldova's children the most.

Most importantly, the CLAC incorporates all the ideas, hopes and perspectives of children and youth, and provides a series of recommendations for programme and policy action. It is hoped that together, these will help guide UNICEF, the Government of Moldova and other partners in their efforts to protect the environment and the lives of Moldovan children.

1.1. Main findings

- **All regions of Moldova face a significant level of climate hazard risk, however, the southern regions especially face the highest risks, in terms of overlapping climate hazards (Map.1).** Cahul and Ștefan Vodă, face some of the highest drought and land degradation risks, whilst Moldova's central regions, including Hîncești and Orhei, face some of the worst flood risks.
- **The poorest children are the most vulnerable to the impacts of climate change and environmental degradation (Map.2).** They have the least access to safely constructed homes, electricity, safe water and sanitation and nutritious foods. They also often face the greatest child protection risks, including gender-based violence. Children from minority groups, including the Roma and children with disabilities, face some of the worst vulnerabilities.
- **When both climate hazard risk (Map.1) and child vulnerability (Map.2) are combined, we find that children living in 28 out of Moldova's 34 districts face a high or extremely high risk of climate change (Map.3).** These districts include Cahul, Ștefan Vodă, Taraclia and Orhei.
- **The environmental picture may look bleak, but it does not have to be inevitable.** Environmental degradation can be reversed and communities can be protected from the impacts of climate change, with the right political will and investment.

- **Young people are an important part of the solution.** Around 77% of young people polled through a 2022 U-Report Poll, said they had already been impacted by climate change, and experienced health impacts, food security issues and access to safe water.⁷ More than 90% of young people said they worried about climate change impacting their futures.⁸

1.2 Recommendations

1.2.1 Overall recommendations

- **Ensure an improved provision of climate resilient infrastructure and services for children, particularly in the most vulnerable regions.** This involves making schools, hospitals, WASH systems and other infrastructure and services more resilient to extreme heat, drought, flooding and storms prioritising the communities who need the most support.
- **Reduce greenhouse gas emissions to improve air quality and protect children's health.** At the national level, this includes advocating for improved energy security through the introduction of domestic renewable energy sources (including wind and solar). It means ensuring that the poorest families have access to consistent energy supply, especially during the winter months, reducing the country's unsustainable reliance on firewood.
- **Improve the collection of climate and environment-related data for children,** at the district levels. This includes working with partners to establish and maintain climate-monitoring stations, routine reporting and the effectiveness of resilience

programmes, post-disaster, particularly in regards to their impacts on children.

- **Ensure that young people are included in all national, regional and international climate negotiations and decisions.** Children and youth must be placed front and centre stage of all climate-related decision-making. This includes the establishment of a National Youth Advisory Board for the Ministry of Environment and Infrastructure.
- **Support efforts to apply for major climate financing, to fund transformational action for energy, WASH and climate.** This will involve teaming up with the Ministry of Environment and international agencies, and branching out beyond the traditional donor base. Specific funding opportunities include the Green Climate Fund (GCF) and the Global Environment Facility (GEF).

1.2.2 Sector specific recommendations

a. WASH

- **Ensure that children, particularly in the most vulnerable rural regions (Fig.3), have access to better, safer water supply and toilets.** This means moving away from the use of outdoor pit latrines, in both homes and schools, and ensuring that toilets are safely constructed, so as to avoid water and soil contamination. It also means treating and filtering water, to eliminate toxins and pathogens, which are dangerous to children's health. Establishing minimum standards for WASH in Schools, will help guidance improved siting, construction, maintenance and monitoring of facilities.
- **Work in the private sector to establish full-chain sanitation services for rural**

⁷ U-Report (2022) Youth Climate Change Poll, November 2022
<https://moldova.ureport.in/opinion/3195/>

⁸ Ibid.

populations, from construction, to pit emptying, treatment and disposal. Monitoring and regulation, particularly in relation to safe disposal, must also be strengthened.

- **Support efforts to expand improved solid waste management, particularly in regards to recycling.** This includes raising awareness and knowledge on plastic pollution and the importance of recycling. It also includes advocating for improved sorting and waste management systems in rural areas, in addition to the full enforcement of the single use plastic ban.
- **Advocate for routine water testing efforts (at least every six months) for schools, hospitals and communities.** Immediate remedial action must be taken to fix water safety issues

b. Maternal and Child Health

- **Work with health sector partners to strengthen the resilience of health services across the country.** This includes improving the siting and construction of facilities, including WASH and waste disposal facilities, to prevent contamination. It also includes scaling-up the use of solar power systems, to ensure the continuity of health services during extreme weather events.
- **Mainstream health considerations with regard to climate change across all policy, strategy and plans, and vice versa,** ensuring that all health sector strategies and plans include a child-focussed climatic component
- **Advocate for improved routine health data collection for children, specifically in relation to the issues identified in the CLAC.** This will help the Government,

UNICEF and other partners to better respond to issues as they arise

- **Work with partners to strengthen Early Warning Systems** to identify, monitor, prepare and respond to climate-induced health threats, before they arise.
- **Improve the capacity to support public health in emergencies,** through the provision of training for administrators, health staff and medical students, to improve their understanding of environmental hazards and their impacts on children's health.
- **Promote information campaigns and raise public awareness** of impacts of climate change and extreme weather events on human health, including young children.

c. Food security and nutrition

- **Advocate for the inclusion of children, climate and nutrition in all relevant policies** (i.e. include climate in nutrition policy and vice versa)
- **Advocate for an improved policy, legislation, and fiscal environment to support improved staple food sufficiency and sustainable food production in Moldova.** This also includes improved regulation of marketing of unhealthy foods and drinks (especially in and near schools to school children) and breastmilk substitutes.
- **Work with the Government and partners to create a sustainable and resilient food system to improve access, demand and utilisation of nutritious foods for children.** More specifically by ensuring:
 - Social and behaviour change strategies, as well as food-based dietary guidelines, should promote the increased consumption of coarse

- grains, pulses, fruits, vegetables, nuts and seeds; whilst limiting the consumption of animal-sourced and processed foods.
 - Lowering the prices of healthy, nutritious foods and increasing those of unhealthy foods high in sugar, fat, and/or salt, for example, through taxes, incentives/disincentives, or other fiscal and regulatory measures.
 - **Ensure that the children in the most vulnerable communities are prioritised through the use of improved social protection mechanisms (Map.3).** This includes:
 - The scale-up of supplemental feeding programmes, free school meals, universal child grants and direct cash transfers in the most hazard prone areas.
 - Expand the pre-registration of households in disaster-prone areas and the use of mobile technologies, to allow more rapid support.
 - Ensure that social protection mechanisms are shock-responsive and closely linked to Early Warning System data.
 - Work with Government partners to improve the **collection of climate and nutrition data for children**, at the provincial and community levels. This includes establishing climate-monitoring stations (e.g. soil moisture gauges) in the most hazard-prone agricultural production areas. Routine child nutrition data should also be included in the country's **Early Warning Systems**.
 - Work with families to **improve adoption of optimal infant and young child feeding and care practices** through:
 - The promotion and support of early and exclusive breastfeeding.
 - The use of diverse, locally available nutritious foods in preparing complementary foods for young children
- d. Education**
- **Revise the National Curricula to ensure that environmental science is taught in a more interesting and meaningful manner.** This includes:
 - Mainstreaming climate and environmental education across all subjects at all levels, introducing new modules on water safety and conservation, energy efficiency and organic food production.
 - Ensuring lessons are made more practical and fun, by teaching classes outside and providing children with the opportunity to identify and tackle key environmental issues in their own communities.
 - Training new and existing teachers on better, more modern teaching practices, for both environmental science and all other subjects.
 - Developing guidance materials for teachers, including lesson plans and practical teaching materials, including capacity building on how to use them. This includes reigniting the Green Box initiative including water testing kits for schools, tools to establish organic gardens and materials for school advocacy campaigns.
 - **Establish programmes to provide Green Skills training and mentorship for young people (Box.x section x).** Specific opportunities for this may include:

- Ensuring existing youth training programmes, such as Upshift, include a stronger environmental component.
- Integrating youth into existing business development projects, (e.g. *Greening the Small and Medium Enterprises*, see Table.x).
- Working with the private sector to establish an annual youth Climate Hackathon, with seed money and paid internship opportunities being provided to the winners.
- Promoting the inclusion of improved green skills training in professional schools and excellence centres as well (including tailored practical recommendations for each of existing qualification with the focus on environment protection, energy efficiency, use of renewable energy sources, specific techniques for collecting, transporting and storing waste etc
- Work with the private sector, government and civil society to establish a paid Environmental Internship and Mentorship Programme for youth.
- **Strengthen energy security, school energy access and efficiency efforts**, including through
 - Introducing energy audits for schools to identify where most heat is being lost and identify priority actions to be taken.
 - Piloting the use of solar for both electricity and water heating, increasing the availability of warm water for handwashing.

- Increasing thermal insulation in schools (including through the use of recycled insulation materials) and the use of LED lighting, to reduce energy consumption.

e. Child protection

- **Ensure that child protection policy and plans address the role that climate shocks and other environmental stresses play in key child protections issues.** This includes enacting policy and programmes to mitigate the impact of climate hazards on the disruption of child protection services, and its impact on violence against children including exploitation, abuse, and on gender based violence as well as mental health.
- **Strengthening the availability and presence of social workers, in the most hazard-prone areas**, to help safeguard children, women and their families/caregivers in the face of increasing environmental shocks and stresses and related economic hardships.

f. Social protection

- Protect children and their parents/caregivers from the impacts of climate change and environmental degradation, by supporting expanded child sensitive **social protection measures** for families living in the most hazard prone areas. This includes cash transfer schemes and school-feeding programmes.
- **Ensure social protection systems are shock responsive**, allowing them to respond more quickly to crises. This includes the establishment of an emergency contingency fund for all social protection programmes, to fund humanitarian cash transfers in case of emergencies.

- Specify procedures for **evaluating the economic impacts of an emergency and provide assistance** that covers a greater share of the expenditures needed to recover from a shock.
- Expand coverage of formal social assistance that protects most vulnerable families, especially with children and persons with disability. Specific increased coverage can best be suggested following specific impact and needs analysis.
- **Work with youth influencers to launch a major digital media campaign**, documenting the first-hand impact of environmental degradation on Moldova's children and advocating for change. Potential topics of focus include, for example, the use of clean energy to promote energy independence or water safety. The campaign should include a Call to Action signed by Moldova's youth and should aim to engage influencers and the media, to create impact at scale.

g. Humanitarian preparedness

- Ensure that existing Early Warning Systems are made more child-sensitive; for example by including up-to-date child health and nutrition monitoring data and that relevant information is transmitted to all partners in a timely manner.
- Advocate for the use of remote sensing and improved use of soil moisture gauges to better pre-empt risk climate-related disasters and plan accordingly, including the prepositioning of supplies where needed.
- Strengthen the shock resilience of existing humanitarian services to prepare for climate-related emergencies through training and guidance, particularly in those areas most vulnerable to climate-related hazards.

h. Communication and advocacy

- **Expand the number of youth climate advocates across the country**, including through Gen-U and U-Report, providing them with training and communications equipment as needed. This includes identifying youth climate leaders at the district level and providing them with opportunities to engage with the Government and media.

2. INTRODUCTION

All children have the right to a safe, healthy environment.⁹ However, globally, many children live in communities affected by climate-related hazards, pollution and other forms of environmental degradation.

Across Moldova, temperatures are rising and rainfall patterns are becoming more erratic and extreme, causing drought and flooding.

(Map.1). In February 2022, the Intergovernmental Panel on Climate Change (IPCC) released the second part of the *Sixth Assessment Report, Climate Change 2022: Impacts, Adaptation and Vulnerability*, highlighting the urgency of the situation.¹⁰ The UN Secretary General also recently declared climate change as a “code red for humanity.”¹¹¹²

The climate crisis, in addition to other environmental threats, has the potential to create a water crisis, a food security crisis and a health and child protection crisis for children in Moldova. It infringes on all aspects of children’s rights, as outlined in the Convention on the Rights of the Child, ratified by the Republic of Moldova.¹³

The economic loss related to the impact of climate variations is estimated to be about 2-6% of GDP annually.¹⁴ Environmental degradation, for example forest and wetland loss and soil degradation, only intensifies these impacts further.



©UNICEF Moldova 2022

The Dubasari and the Chisinau regions are prone to flooding, whilst the country’s southern regions are most at risk of prolonged droughts (Map.1).¹⁵

Moldova’s poorest children are the most vulnerable children to these impacts (see Map.2). These children experience multidimensional poverty, which includes a lack of access to water, sanitation, nutritious food, healthcare and quality education, as well as child protection risks. Those from minority groups, migrant youth, Roma children and children with disabilities or chronic illnesses face additional disadvantages.¹⁶

Many of these children live in areas that experience multiple, overlapping climate and environmental hazards such as extreme heat, water scarcity, wildfires and flooding, increasing their risk and exposure.

Climate change is an issue that many young people in Moldova care about. According to a recent U-Report survey, around 77% of young people polled said that climate change had

⁹UNHCR (2021) A universal right to health [https://www.europarl.europa.eu/RegData/etudes/ATAG/2021/698846/EP_RS_ATAG\(2021\)698846_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/ATAG/2021/698846/EP_RS_ATAG(2021)698846_EN.pdf)

¹⁰IPCC (2022) Climate Change 2022: Impacts, Adaptation and Vulnerability <https://www.ipcc.ch/report/sixth-assessment-report-working-group-ii/>

¹¹Ibid.

¹²United Nations (2021) Secretary General calls latest IPCC Report a “Code Red for humanity” <https://www.un.org/press/en/2021/sgsm20847.doc.htm>

¹³UNTC (1989) Convention on the Rights of the Child https://treaties.un.org/Pages/ViewDetails.aspx?src=TREATY&mtmsg_no=IV-11&chapter=4#EndDec

¹⁴SIDA (2018) Multidimensional Poverty Assessment Moldova <https://cdn.sida.se/app/uploads/2022/04/15085758/2020-MDPA-Moldova.pdf>

¹⁵Ibid.

¹⁶Ibid.

impacted their health, food security and access to safe water (*Annex.4*).¹⁷

Eighty percent of young people polled said they wanted the Government and UNICEF to do more to protect young people from climate change and other forms of environmental degradation, particularly in terms of tackling plastic waste and air pollution.¹⁸ Despite this, few young people are actively involved in supporting community-level environmental action. Even fewer are participating in the environmental policy decisions that affect their future.¹⁹ Young people also highlighted an urgent need to increase knowledge and awareness of these issues and improve green employment and training opportunities for them.

The Climate Landscape Analysis for Children (CLAC) is a study which aims to support Moldova’s efforts to build a cleaner, greener society for its children. The report will compile all the latest data, research and other evidence from across the country, including the climate hazards impacting children, and map the latest initiatives relating to climate in the country, including the ideas, hopes and perspectives of children and youth. It will also provide a series of recommendations to help guide UNICEF’s future programming, policy and advocacy work. As such, it is hoped that the CLAC will help support the efforts leading up to COP 28 and beyond, driving more rapid climate action for children across the country

¹⁷U-Report (2022) Youth Climate Change Poll, November 2022
<https://moldova.ureport.in/opinion/3195/>

¹⁸Youth Progress Index (2022) Republic of Moldova
<https://youthprogressindex.org/#>

¹⁹Ibid.

3. CLIMATE CHANGE

3.1 The current climate

The climate of Moldova is moderately continental, characterised by relatively mild winters with little snow, long warm summers and low humidity.²⁰ The country has highly variable rainfall levels, and drought-like conditions are common.²¹

The Republic of Moldova divided into three climate zones, which vary by elevation, with varying temperatures and precipitation:

- **Northern forest-steppe:** Annual temperatures average 6.3°–9.7°C, and precipitation ranges from 550–600 mm. This region experiences a drought, once every 10 years on average.
- **Central forest zone:** Annual temperatures range from 7.5°–10°C and precipitation ranges from 500–550 mm per year. This region experiences a drought once every six years on average.
- **Southern steppe:** Annual temperatures range from 8.3°–11.5°C and precipitation ranges from 450–550 mm per year, with a significant portion of winter precipitation falling as snow. This region experiences a drought once every three to four years on average.

3.2 Observed changes

3.2.1 Changes in temperature

Historic weather data preceding Moldova's independence from the Soviet Republic is limited.



©Alex Prodan

However, where information is available, climate trends from the 1980s point to an increase in temperatures by an average of 0.58°C per decade, with warming most significant between March–August.²²

Seven of the ten warmest years in Moldova's history have occurred within the past two decades.

3.2.2 Changes in Rainfall patterns

Since the 1970s, the Republic of Moldova has experienced a gradual decline in rainfall and shift in seasonal rainfall patterns, with rainfall levels increasing March–May and decreasing June–August. This has simultaneously led to an increased risk of water scarcity and flooding.²³

Water scarcity

As a country, Moldova is well-endowed with freshwater sources. It has a well-developed

²⁰World Bank (2022) Climatology: Moldova, Climate Change Portal <https://climateknowledgeportal.worldbank.org/country/moldova/climate-data-historical>

²¹Ministry of Environment and Territorial Development (2000) First National Communication of the Republic of Moldova under the UNFCCC <http://unfccc.int/resource/docs/natc/moldnc2.pdf>

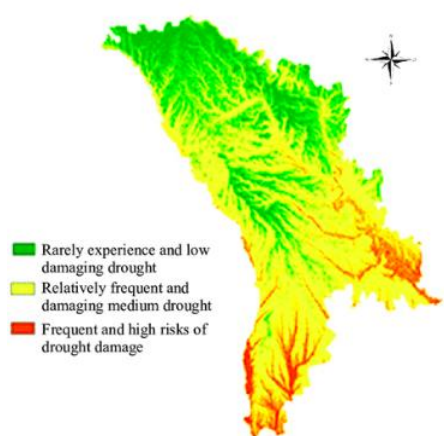
²²World Bank (2022) Climatology: Moldova, Climate Change Portal <https://climateknowledgeportal.worldbank.org/country/moldova/climate-data-historical>

²³Ibid.

network of rivers and streams, all draining south towards the Black Sea. However, the majority of these surface water sources are small, shallow streams that often dry up during the summer months.²⁴

Southern Moldova is particularly vulnerable to water scarcity and drought, due to warmer temperatures and communities' distance from the Dniester and Prut rivers. (Fig.x).

Map.4 The risk of damaging drought²⁵



Historically Moldova has experienced drought once every 3 to 10 years, depending on geographic location.²⁶ It is a growing problem for the country, and since the 1980s, droughts have increased in their intensity and persistence as a result of rising temperatures and overall decreases in precipitation.

Some of Moldova's worst experiences of drought include:

- In 2020, the country was hit by one of the most severe droughts over the past two decades causing a drop in agricultural production by almost 30 percent.²⁷
- In 2007, Moldova experienced the worst drought in living memory, affecting 75–80 percent of the population and resulting in significant damage to the economy.²⁸

3.2.1 Flooding

In Moldova, most precipitation occurs as rain in the warmer months, particularly in June and July, with less than 10% falling as snow.²⁹

The Dniester River, the country's largest river, expands during the spring snowmelt and with summer rains, often leading to flooding. Moldova's other, smaller, main river, the Prut, is a tributary of the Danube, which it joins at the extreme southern tip of the country.

Around 40% of Moldova's settlements are at risk of flooding.³⁰ The greatest flood risk occurs on the floodplains of the two main rivers, the Prut and the Dniester (Fig.x). Flood defence dykes exist on the rivers and there are some on the tributaries; these provide some flood protection, however, many require restoration and expansion to cope with the growing threat of flooding.³¹

²⁴ USAID (2017) Climate Risk Profile Moldova <https://www.climatelinks.org/resources/climate-risk-profile-moldova>

²⁵ Ministry of Agriculture (2019) National Drought Plan https://www.unccd.int/sites/default/files/country_profile_documents/Drought%20Plan%20ENG%2020%20June%20%2C%202019.pdf

²⁶ World Bank (2020) Special Focus Note: Moldova's Vulnerability to Natural Disasters and Climate Risks <https://thedocs.worldbank.org/en/doc/7bf12b95f10a3daf7b570718b2100e15-0080012021/related/MEU-DRM-Special-Topic-May-2021-FINAL-eng-Copy.pdf>

²⁷ Ibid.

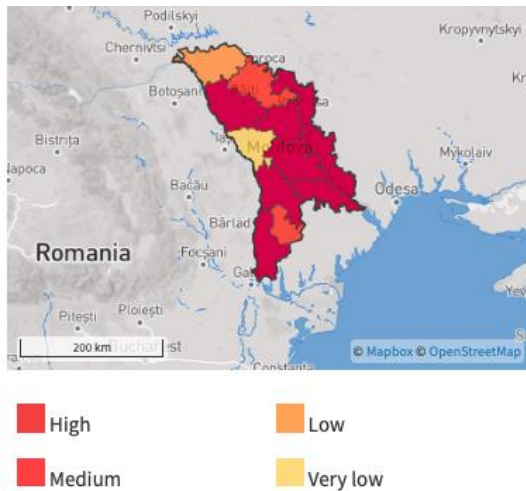
²⁸ Ibid.

²⁹ World Bank (2022) Climatology: Moldova, Climate Change Portal <https://climateknowledgeportal.worldbank.org/country/moldova/climate-data-historical>

³⁰ World Bank (2021), Moldova Special Focus Note: Moldova's Vulnerability to Natural Disasters and Climate Risks <https://thedocs.worldbank.org/en/doc/7bf12b95f10a3daf7b570718b2100e15-0080012021/related/MEU-DRM-Special-Topic-May-2021-FINALeng-Copy.pdf>

³¹ Frank, Enrico & Ramsbottom, David & Avanzi, Agostino. (2016). Flood Risk Assessment and Prioritisation Measures: Two key tools in the development of a national programme of flood risk management measures in Moldova 10.2495/SAFE-V6-N3-475-484/003. <https://bit.ly/3OFNVHZ>

Map.5 Current risk of river flooding



Dam failure, following heavy rainfall, is also considered a serious potential threat.³² Deforestation is also exacerbating the risk of flash flooding and landslides (section x).³³ Examples of severe flooding include:

- **Dniester and Prut river flash flooding (2008):** Moldova's worst flash floods were experienced in the spring of 2008, leading to 3 deaths, the evacuation of 4,251 people and damages up to 300 million USD.
- **Dniester and Prut river flash flooding (2010):** Heavy rains and flooding in July 2010 directly affected 12,000 people, leading to the declaration of a national emergency.
- **Chisinau Flooding (2022):** In August 2022, major infrastructure damage occurred in Chisinau as a result of flash flooding, leading to flooded streets and infrastructure damage.³⁴

Finally, in Moldova, **43.7% of settlements are threatened by landslides**, and this risk is increasing every year.³⁵ Landslides are mainly linked to subsidence from large construction works and widespread deforestation, rather than heavy rainfall events. Most damage is related to local displacement, which may result from damage to buildings and other assets, and loss of cropland. Average annual losses from them amount to \$1.3 million.³⁶

3.3 Projected changes

3.3.1 Rising temperatures

According to the IPCC, global greenhouse gas emissions must be halved by 2030, and cut to zero by 2050, to avoid the worst impacts of climate change. However, most countries, including Moldova, are still not yet on track to meet these targets.³⁷

As such, it is expected that Moldova may see an increase in average temperature of 2°–3°C by 2050.³⁸ The greatest warming will be experienced across the country, from June–August,³⁹ with an increase in the number “hot” days* and “dry” days (zero precipitation).⁴⁰ The greatest temperature increases are expected in the northern regions.⁴¹

3.3.2 Changes in rainfall patterns Drought

Climate change is projected to decrease surface flows of the country's two major

³² Ibid.

³³ Mihnea Cristian, Popa & Diaconu, Daniel. (2019). Effects of Deforestation on Flooding in the Moldova River Basin. *Aerul și Apa: Componente ale Mediului*. 2019. 129-136. 10.24193/AWC2019_13.

³⁴ Planet Plus (2022) Flash flood in Moldova <https://www.youtube.com/watch?v=DlrBTuWqVRI>

³⁵ World Bank (2022) Moldova, Climate Change Portal: Vulnerability <https://climateknowledgeportal.worldbank.org/country/moldova/vulnerability>

³⁶ Ibid.

³⁷ IPCC (2018) AR15 Summary for Policy Makers <https://www.ipcc.ch/sr15/chapter/spm/>

³⁸ USAID (2017) Climate Risk Profile <https://www.climate-links.org/resources/climate-risk-profile-moldova>

³⁹ Ibid.

⁴⁰ Ibid.


⁴¹ Ibid.

rivers, the Dniester and Prut, by 16–20 percent from 2020–2029.⁴²

This will likely impact all regions, but it is Moldova’s southern regions that will be most affected, particularly those located far from the Dniester and Prut (Map.4).⁴³ Irrigation demands are projected to increase by 10–15 percent by 2040, placing additional pressures

on water supply, with devastating impacts for the economy.^{44, 45} The summers especially are likely to become much drier. However, at the same time, winters are expected to receive more intense precipitation.⁴⁶ This will likely increase the frequency and severity of floods and landslides, particularly in Briceni, Ocnita, Edinet and Donduseni, which are located in close proximity to the country’s main rivers.

Table.1 Summary of observed and projected climate change in Moldova

Climate impacts	Observed Changes	Projected Changes	Districts with the greatest vulnerability
<p>1. Rising temperatures</p> 	<ul style="list-style-type: none"> • Increase in temperatures of 0.58°C per decade (with warming most significant between March– August).⁴⁷ • The hottest year on record for Moldova was in 2020, where 37.9 °C was recorded in Tiraspol.⁴⁸ 	<ul style="list-style-type: none"> • Increase in average temperatures by 2°–3°C by 2050, with warming greatest from June– August.⁴⁹ • Increase in the number “hot” days* by 32 and “dry” days (zero precipitation) by 12 by 2050.⁵⁰ • Greater temperature increases are expected in the northern regions.⁵¹ 	<ul style="list-style-type: none"> • Cahul, Ștefan Vodă, Taraclia, Causeni, UTA Gagauzia, Basarabeasca, Anenii Noi, Criuleni, Chisinau, Cimislia, Leova and Cantemir will likely experience the highest temperatures.
<p>2. Changes in rainfall patterns (drought and flooding)</p>	<ul style="list-style-type: none"> • Overall decline in rainfall and shift in seasonal rainfall patterns. • Rainfall levels increasing March– May and decreasing June–August⁵² 	<ul style="list-style-type: none"> • Changes in precipitation are uncertain; some projections suggest a mild reduction in annual precipitation by 2100, with drier summers (June– August), wetter winters (December–February) and more variable precipitation.⁵³ 	<ul style="list-style-type: none"> • Drought: Cahul, Ștefan Vodă, Taraclia, Causeni, UTA Gagauzia, Basarabeasca and Anenii Noi • Flooding: Briceni, Ocnita, Edinet and Donduseni.

⁴² Ibid.

⁴³ Ibid.

⁴⁴ Ibid.

⁴⁵ World Bank (2020) Special Focus Note: Moldova’s Vulnerability to Natural Disasters and Climate Risks <https://thedocs.worldbank.org/en/doc/7bf12b95f10a3daf7b570718b2100e15-0080012021/related/MEU-DRM-Special-Topic-May-2021-FINAL-eng-Copy.pdf>

⁴⁶ Ibid.

⁴⁷ World Data (2022) The climate in Moldova

<https://www.worlddata.info/europe/moldova/climate.php>

⁴⁸ Ibid.

⁴⁹ USAID (2017) Climate Risk Profile


<https://www.climatelinks.org/resources/climate-risk-profile-moldova>

⁵⁰ Ibid.

⁵¹ Ibid.

⁵² Ibid.

⁵³ Ibid.

		<ul style="list-style-type: none"> ● Increase in the frequency and severity of extreme events such as droughts, floods and landslides.⁵⁴ ● ⁵⁵Climate change has also been projected to decrease surface river flows by 16–20 percent from 2020–2029, leading to water scarcity.⁵⁶ 	
---	--	--	--

4. OTHER ENVIRONMENTAL ISSUES

In addition to the impacts of climate change, Moldova also faces a myriad of other environmental challenges caused by human activity. These include air pollution, land and water pollution. A more detailed analysis of each of these issues is contained in the sections below.

The country ranked 84th in the world in the Environmental Performance Index (EPI) for 2020.⁵⁷ The greatest areas of concern have been wetland and general biodiversity loss and greenhouse gas emissions (specifically sulphur dioxide and nitrogen oxide).⁵⁸



©UNDP Moldova

4.1 Air pollution

Air pollution is a mix of chemicals, particulate matter, and biological materials that react with each other to form tiny hazardous particles.⁵⁹

Air pollution (particularly carbon dioxide, methane, nitrogen and sulphur dioxides) increases urban temperatures (particularly in the summer) and contributes towards global warming.⁶⁰

In terms of children’s health (see section [6.3.2 Air pollution](#)), some of the most concerning

⁵⁴ World Bank (2020) Special Focus Note: Moldova’s Vulnerability to Natural Disasters and Climate Risks <https://thedocs.worldbank.org/en/doc/7bf12b95f10a3daf7b570718b2100e15-0080012021/related/MEU-DRM-Special-Topic-May-2021-FINAL-eng-Copy.pdf>

⁵⁵ Government of the Republic of Moldova (2022) Updated National Determined Contribution https://unfccc.int/sites/default/files/NDC/2022-06/MD_Updated_NDC_final_version_EN.pdf

⁵⁶ USAID (2017) Climate Risk Profile <https://www.climatelinks.org/resources/climate-risk-profile-moldova>

⁵⁷ University of Yale (2022) EPI: Moldova <https://epi.yale.edu/epi-results/2022/country/mda>

⁵⁸ Ibid.

⁵⁹ AMAT (2021) <https://www.iamat.org/risks/air-pollution> Last accessed 7 April 2022

⁶⁰ World Bank (2022) <https://data.worldbank.org/indicator/EN.ATM.CO2E.PC?end=2018&locations=SL&start=1960&view=chart> Last accessed 7 April 2022

types of air pollution in Moldova include Carbon Monoxide (Fig.xa), Nitrous Oxide (Fig.xb), Sulphur Dioxide (Fig.xc) and Particulate matter (Fig.xd).

Over the years the overall production and ratio of greenhouse gas emissions has changed. For example, the share of carbon dioxide emissions is higher than the share of CH₄ and NO_x emissions which show a slow downward trend compared to their peak 1990-2015 values, while Fluorinated gases (F-gases), man-made gases used in a range of industrial applications, show a steady growth since 2005 (Table.2).⁶¹

Table.2 GHG emissions in the Republic of Moldova, kt CO₂ equivalent⁶²

GHGs	1990	1995	2000	2005	2010	2015	2020	2025	2030
CO ₂ (net emissions)	29 013	5 037	320	3 621	6 360	6 492	7 390	8 969	10 512
CH ₄	5 706	4 169	3 322	3 303	2 914	2 863	3 180	2 872	2 946
N ₂ O	2 861	1 956	1 499	1 760	1 644	1 573	1 870	1 972	2 110
F-gases	-	5	10	42	113	179	302	399	516
Net GHG emissions	37 580	11 167	5 151	8 726	11 031	11 108	12 741	14 212	16 086
Changes compared to 1990, %		-70	-86	-77	-71	-70	-66	-62	-57

Air quality varies across Moldova by region (Fig.x) . Key hotspots include Chişinău, Bender, Criuleni, Anenii Noi and Bălţi, including the regions immediately surrounding Kuchurgan and Tiraspol Kuchurgan power stations and Moldova Steel Works, Rybnitsa.⁶³

Fig.2 Average air pollution across Moldova⁶⁴

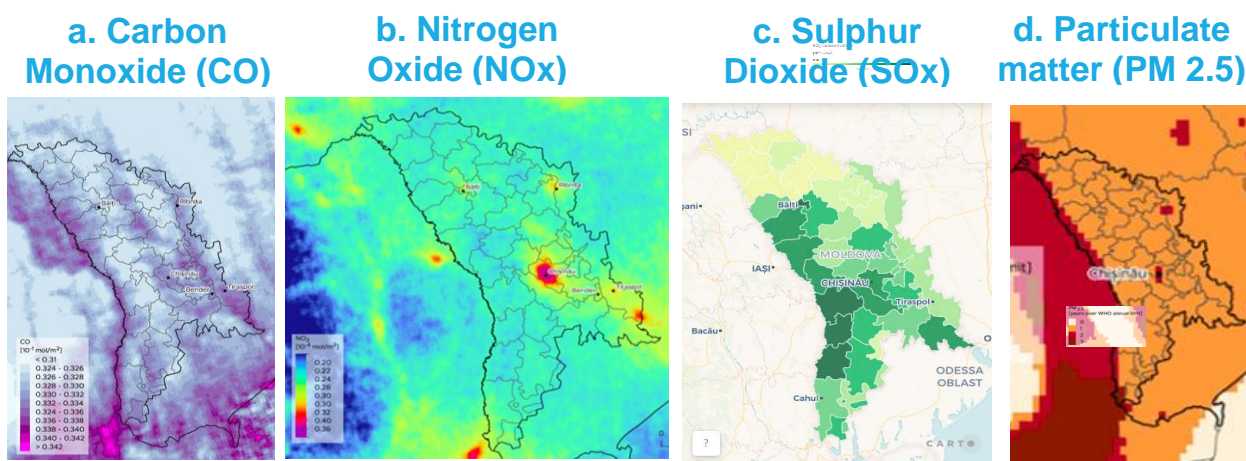


Table.2 Key sources of air pollution in Moldova

Air pollutant	Key sources
Carbon dioxide (CO ₂)	Vehicle emissions, cement production, deforestation as well as the burning of fossil fuels like coal, oil and natural gas. ⁶⁵

⁶¹ Government of the Republic of Moldova (2018) Fourth National Communication to the UNFCCC <https://unfccc.int/documents/64790>

⁶² Ibid.

⁶³ UNDP (2021) View from space on the air we breathe in Moldova <https://www.undp.org/moldova/news/view-space-air-we-breathe-moldova>

⁶⁴ UNDP (2021) View from space on the air we breathe in Moldova <https://www.undp.org/moldova/news/view-space-air-we-breathe-moldova>

⁶⁵ EPA (2022) Sources of greenhouse gas emissions <https://www.epa.gov/ghgemissions/sources-greenhouse-gas-emissions>

Carbon Monoxide	Vehicle emissions in addition to unvented kerosene and gas space heaters, leaking chimneys and furnaces and gas stoves. ⁶⁶
Nitrogen Oxides (NOx)	Vehicle emissions, energy production, agriculture, industrial processes and human waste. ⁶⁷
Sulphur Dioxide	Energy production (especially those that burn coal), petroleum refineries, cement manufacturing, paper pulp manufacturing, and metal smelting and processing facilities.
Methane (CH ₄)	Energy mining and production, livestock, sanitation and human waste.
Fluorinated gases (F-gases)	Refrigerators, air conditioning and heat pump (RAC) equipment, fire protection systems including fire extinguishers and other types of foam. ⁶⁸
Particulate Matter	Either emitted directly from a source, such as construction sites, unpaved roads, fields, smokestacks or fires, or formed as a result of complex reactions of chemicals such as sulphur dioxide and nitrogen oxides in the atmosphere ⁶⁹

The current energy crisis has also exacerbated Moldova’s air pollution issues.

Moldova has already decreased gas consumption by 35 to 40% by switching a power plant in Chişinău from gas to heavy fuel oil, significantly increasing emissions.⁷⁰

Air pollution also varies by season, with winter experiencing the highest levels of Sulphur Dioxide, Nitrous Oxide and Carbon Dioxide, as energy production ramps up during the colder months. Such emissions exacerbate both chronic and acute respiratory illnesses among children (*see Section.x*).⁷¹

"We have so many old polluting cars in Moldova. They're everywhere - and its impacting all aspects of children's health."

VERA CARAPASCAL, 16 CAHUL

4.2 Land and water degradation

Land degradation, in all its forms, remains a major challenge for Moldova. **According to**

⁶⁶EPA (2022) Basic Information about Carbon Monoxide (CO) Outdoor Air Pollution <https://www.epa.gov/co-pollution/basic-information-about-carbon-monoxide-co-outdoor-air-pollution>

⁶⁷S.C. Gad (2014) Encyclopedia of Toxicology <https://www.sciencedirect.com/referencework/9780123864550/encyclopedia-of-toxicology>

⁶⁸UK Department of Energy and Climate (2021) F-gases GHG Inventory summary Factsheet https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/140082/5555-fgases-factsheet.pdf

⁶⁹EPA (2022) Particulate Matter (PM) Basics <https://www.epa.gov/pm-pollution/particulate-matter-pm-basics>

⁷⁰Power Technology (2022) Moldova faces winter darkness as Russia weaponises energy <https://www.power-technology.com/features/moldova-gas-russia-transnistria/>

⁷¹Stories from Space (2022) Air pollution in Moldova from space See the Moldovan regions through the eyes of the Sentinel 5P satellite http://stories.worldfrom.space/air_pollution_md/

the Government, around 26% of land is currently classed as degradation, with an annual loss of land and productive soil standing at 6,400ha and 26 million tonnes respectively.⁷² This land, soil and forest loss is also leading to an increase in Moldova’s greenhouse gas emissions, largely as a result of reductions in vegetation cover and soil organic carbon (SOC) stock.

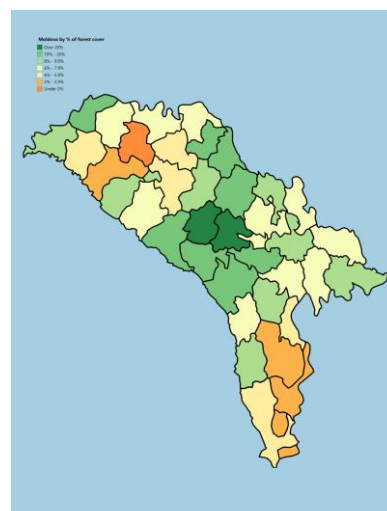
Conversely, the carbon sequestration potential of reforestation and restoring degraded lands can help to significantly improve Moldova’s carbon mitigation efforts, in addition to reducing drought and water scarcity and protecting communities from the impacts of climate change.

Soil and water pollution from plastic and other human waste also clogs up waterways and contaminates human food supplies (see [6.3.2e infectious disease](#) and [6.2.2 water safety impacts](#))

4.2.1 Forest loss

Forests presently cover around 11 percent of Moldova’s land, much of which is located in the country’s central regions (Map.x).⁷³ **From 2001 to 2021, Moldova lost 10.9kha of relative tree cover, equivalent to a 3.1% decrease since 2000 as a result of human activity.**⁷⁴ The worst affected districts are Drochia and Riscani in the north, and Gagauzia in the south (Map.6).⁷⁵

Map.6 Forest cover in Moldova⁷⁶



Extensive deforestation, particularly during the 19th and 20th centuries, led to major soil erosion, wind damage, a substantial drop in the water table, flooding, desertification and loss of biodiversity.⁷⁷

In recent years, some of these trends have started to reverse, as authorities and scientists have lobbied for increased afforestation and protection for the country’s woodland areas.

Since the 1990s, large-scale reforestation projects, including the Moldova Soil Conservation Project, have been carried out, leading to increased crop and livestock yields and other benefits for rural areas.⁷⁸

⁷² Government of the Republic of Moldova (2018) National Land Degradation Neutrality Targets https://www.unccd.int/sites/default/files/ldn_targets/Moldova%20LDN%20TSP%20Country%20Report.pdf

⁷³ Global Forest Watch (2022) Moldova <https://bit.ly/3VDMuCh>

⁷⁴ Ibid.

⁷⁵ Ibid.

⁷⁶ Ibid.

⁷⁷ Ibid.

⁷⁸ UNFCCC (2008) Moldova Soil Conservation Project http://www.clima.md/public/files/2_Cadrul_National/PDD_Moldova_Soil_Conservation_Project.pdf



©The FLEG Programme

Despite much progress, more needs to be done to protect one of Moldova's most valuable resources.

Today, the greatest threats to Moldova's forests are all largely as a result of human activity. This includes deforestation activities to make way for agricultural land, and the collection of firewood and other timber, an issue exacerbated by Moldova's current energy crisis.⁷⁹ Forests are also being threatened by climate change, air and water pollution, fire, species loss and invasive species.⁸⁰

All districts of Moldova are also considered to be at high risk for forest fires, which in addition to destroying natural habitats, can also have devastating impacts on children.⁸¹ Peak fire season typically begins in late February and lasts around 12 weeks.⁸² In addition to destroying natural habitats, fires also threaten the lives of children and their families (*6.3.2b Death and injury from climate-related disasters* and *6.3.2.c Air pollution*)

⁷⁹ AP (2022) Europe's energy crisis raises firewood prices, theft fears <https://apnews.com/article/technology-business-germany-weather-923a058f06c8a679f982824b5a337108>

⁸⁰ Climate Change Post (2022) Forestry and Peatlands Moldova <https://www.climatechange.org/moldova/forestry-and-peatlands/>

⁸¹ Think Hazard (2022) Moldova Wildfire <https://thinkhazard.org/en/report/165-moldova/WF>

⁸² Global Forest Watch (2022) Moldova <https://bit.ly/3VDMuCh>

Finally, rising temperatures and drier conditions, as a result of climate change, are slowing tree growth rates, and in severe cases, causing tree loss.⁸³ By 2040, it is thought that 15–25 percent of trees in Moldova's northern regions are likely to be water stressed, with ash biomass growth estimated to decrease by 20–40 percent by mid-century.⁸⁴ In addition, many native species such as ash and hornbeam are expected to be lost, representing a major loss of culture and nature for the children of Moldova.⁸⁵

"When we cut down our forests, it affects the air we breathe and we lose an important carbon sink."

**CATALINA BURLACENCO,16
CHIȘINĂU**

Recent research has also found that children growing up near forests have smoother cognitive development and better mental health, as a result of being able to play and explore nature (*6.6.4 Mental health*).⁸⁶

4.2.2 Soil and water pollution

Agriculture is considered the main source of chemical pollution in Moldova's river basins.⁸⁷ The excessive use of chemical fertilisers, pesticides, and herbicides, particularly during

⁸³ Ibid.

⁸⁴ Ibid.

⁸⁵ Ibid.

⁸⁶ Imperial College (2021) Living near woodlands is good for children and young people's mental health

<https://www.imperial.ac.uk/news/226853/living-near-woodlands-good-children-young/>

⁸⁷ Ibid.

the Soviet period, resulted in the contamination of both soil and groundwater.⁸⁸ It is an issue which continues to this day, with the total quantity of chemical fertilisers being used increasing by 3.7% between 2005 and 2017.⁸⁹ This use contaminates the food children eat (6.3.2e *infectious disease*) and the water they drink (6.2.2 *water safety impacts*).

Secondly, natural processes, such as heavy rainfall, drought and wind erosion, exacerbated by climate change, lead to a reduction in crop yields, the clogging and contamination of waterways and a decline in biodiversity.⁹⁰ In addition to threatening the health, food security and safety of Moldova's children, soil erosion also leads to an estimated €45-55 million in losses each year for the country.⁹¹

In Moldova, nearly 50% of rivers and streams are heavily polluted and 27% are polluted, which makes them unfit for swimming, fishing and for drinking water.⁹² At the same time, less than half of groundwater reserves meet the required quality for drinking water, with major health implications for children (6.2.2 *water safety impacts*).

Untreated wastewater from homes and industry can also contaminate soil and water sources.⁹³ The Government has introduced various acts to try and reduce water pollution, including Regulation 950/2013, which aims to improve the treatment and

discharge of wastewater. However, the enforcement of these policies remains poor, with limited monitoring and penalties for non-compliance.⁹⁴

Finally, where treatment facilities exist, they are often only equipped for mechanical treatment and may function poorly. This means that Moldova's downstream rivers suffer from much higher concentrations of ammonia and other pollutants compared to upstream.⁹⁵

"I worry that the toxins in the water we drink and the food we eat affects children's health and brain functioning. "

**MARILINA MIDRIGAN, 16
CHIȘINĂU**

A recent OECD study found that, in the Dniester River Basin alone, 657 settlements, 60 centralised wastewater discharge systems and 48 wastewater treatment plants were key point sources of water pollution in Moldova.⁹⁶

Finally, more than 193,000 children, a third of the child population, are thought to have more than 5mg of lead in their blood⁹⁷ Children's exposure to microplastics is also an

⁸⁸ Kuharuk, Ecaterina & Crivova, Olga. (2014). The State of Soil Erosion in the Republic of Moldova and the Need for Monitoring. 10.1007/978-94-007-6187-2_3

https://www.researchgate.net/publication/299945781_The_State_of_Soil_Erosion_in_the_Republic_of_Moldova_and_the_Need_for_Monitoring/citation/download

⁸⁹ Summer, Wolfgang & Diernhofer, Wolfgang. (2003). Soil erosion in the Republic of Moldova - The importance of institutional arrangements https://www.researchgate.net/publication/267850876_Soil_erosion_in_the_Republic_of_Moldova_-_The_importance_of_institutional_arrangements

⁹⁰ Ibid.

⁹¹ Ibid.

⁹² OECD (2021) Developing a Water Policy Outlook for Georgia, the Republic of Moldova and Ukraine <https://doi.org/10.1787/512a52aa-en>

⁹³ Ibid

⁹⁴ Ibid.

⁹⁵ Ibid.

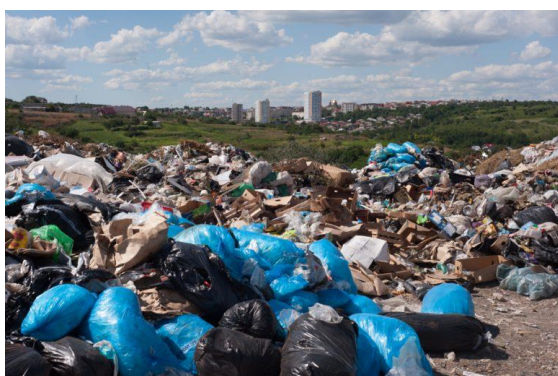
⁹⁶ Ibid.

⁹⁷ UNICEF (2020) The toxic truth Children's exposure to lead pollution undermines a generation of future potential <https://www.unicef.org/reports/toxic-truth-childrens-exposure-to-lead-pollution-2020>

emerging area of research (6.6.2b. *Safety impacts*).

4.2.3 Lack of effective waste management

Waste represents processed products or substances that cannot be used in human activities (production or consumption).⁹⁸ Due to prolonged decomposition and emissions generated during this decomposition, human waste is an important source of environmental pollution.



©Moldnova.eu

Between 2014 and 2018, the volume of household waste fluctuated around 2 million cubic metres before growing more intensely between 2019 and 2020.⁹⁹ As a result, Moldova generated about 2.4 million m³ in household waste in 2020.¹⁰⁰

Around a thousand tons of waste oil, two thousand tons of waste batteries and 260 thousand tons of packaging waste are generated annually in Moldova.¹⁰¹ Just 10% of recyclable waste is currently recovered from

households, with the remaining 90% being transferred to landfill sites.

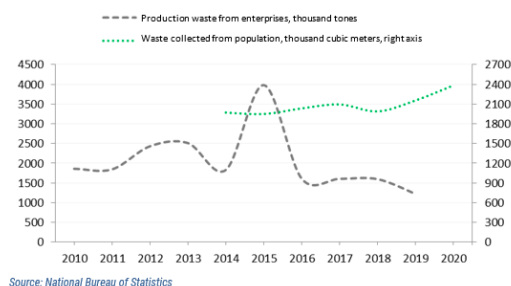
"We must kick our plastic addiction. Recycling is important, but we must come up with alternatives."

**EVELINA NEAMATU, 15
CHIȘINĂU**

Around 99.7% or 1,147 landfill sites located in urban and rural areas, do not meet environmental legislation requirements.¹⁰²

However, some progress has been made, particularly among enterprises. Between 2010 and 2019, enterprises decreased their waste by more than one-third (Fig.3).¹⁰³

Fig.3 Waste generated by enterprises and households (2010-2020)¹⁰⁴



⁹⁸ European Environment Agency (2014) EEA Signals 2014 – Well-being and the environment. Waste: a problem or a resource? <https://www.eea.europa.eu/publications/signals-2014/articles/waste-a-problem-or-a-resource>

⁹⁹ EU 4 Environment (2021) Towards Green Transformation: the Republic of Moldova <https://euneighbourseast.eu/wp-content/uploads/2022/02/report-green-growth-indicators-republic-moldova-2021-eng.pdf>

¹⁰⁰ Ibid.

¹⁰¹ Moldova.org (2019) Being eco-friendly in Moldova: the facets of the plastic pollution problem and its long-term solutions <https://www.moldova.org/en/possible-eco-friendly-moldova-facets-plastic-pollution-problem-possible-solutions/>

¹⁰² Ibid.

¹⁰³ Ibid.

¹⁰⁴ Ibid.

5. ENERGY PRODUCTION AND ACCESS

5.1 An overview

The Republic of Moldova is facing an energy crisis. **Around 60% of Moldova’s population currently live in energy poverty, spending up to 65% of their budgets on energy bills,** with the poorest families having no choice but to limit their energy use.¹⁰⁵¹⁰⁶¹⁰⁷

A key reason for this is that Moldova is almost completely reliant on fossil fuel and electricity imports from neighbouring countries (particularly Russia and the Ukraine). As such the International Energy Agency, recently stated that “Moldova’s energy self-sufficiency is among the lowest in the world.”^{108 109}

The Russia-Ukraine conflict has led to nationwide power cuts occurring throughout 2022, due to Russian missile strikes.¹¹⁰¹¹¹

A lack of domestic energy resources and raw materials in the country has contributed considerably to the nation’s strong dependence on other former Soviet Republics.



©EU Neighbours East

This dependence has affected consumers’ capacity to pay for the energy used due to the increased prices of energy resources. For example, between 1997 to 2014 natural gas tariffs increased 13 times and electricity, 6.6 times.¹¹² Gas prices have also recently increased by 400% as a result of the Russia-Ukraine conflict, increasing poverty and forcing families to ration energy, with major implications for children’s health and overall well-being (Box.1).¹¹³

¹⁰⁵ Politico (2022) Europe’s security is at stake in Moldova https://www.politico.eu/article/europe-security-ukraine-russia-war-at-stake-in-moldova/?fbclid=IwAR3uxBUIZz7XFyxal4KvDnAWLCEUuY7Zb3uzkmEdRmUp4qwM_k0vPA5391g

¹⁰⁶ UNDP (2022) Report on Energy Poverty Assessment and Support Mechanisms in the Republic of Moldova <https://www.undp.org/moldova/publications/report-energy-poverty-assessment-and-support-mechanisms-republic-moldova>

¹⁰⁷ Belfast Telegraph (2022) Prices rocket and forests felled as people turn to firewood to heat homes 27 October 2022 <https://www.belfasttelegraph.co.uk/news/world-news/prices-rocket-and-forests-felled-as-people-turn-to-firewood-to-heat-homes-42099343.html>

¹⁰⁸ IEA (2022) Moldova Energy Profile <https://www.iea.org/reports/moldova-energy-profile>

¹⁰⁹ Ibid.

¹¹⁰ Reuters (2022) Most Moldovan power supplies restored after Russian strikes on Ukraine <https://www.reuters.com/world/europe/half-moldova-without-power-after-russian-strikes-ukraine-deputy-pm-2022-11-23/>

¹¹¹ Bloomberg (2022) Just ‘17 People and a Dog’ Stand Between Ukraine’s Neighbor and Energy Meltdown <https://www.bloomberg.com/news/features/2022-11-25/as-russia-cuts-gas-a-tiny-team-races-to-save-moldova-from-energy-disaster>

¹¹² IEA (2022) Moldova Energy Profile <https://www.iea.org/reports/moldova-energy-profile>

¹¹³ Ibid.

Box.1 How does energy poverty impact Moldova's children?

A lack of electricity and heat in the home leads to a myriad of problems for Moldova's children. More specifically, these issues include:

Without electricity, there is no heat in homes and no hot water, meaning children cannot shower or wash properly, with issues for hygiene, health and dignity.

Without heat, children are also at risk of life-threatening hypothermia, strep throat, ear aches, influenza, bronchitis, and other respiratory illnesses.

The lack of light limits students' ability to study at home.

Dark streets and homes pose a security risk, particularly for girls.

Children who use electric wheelchairs cannot charge their batteries.

Children with specific health needs (e.g. diabetes) may struggle to keep their medication at the proper temperature

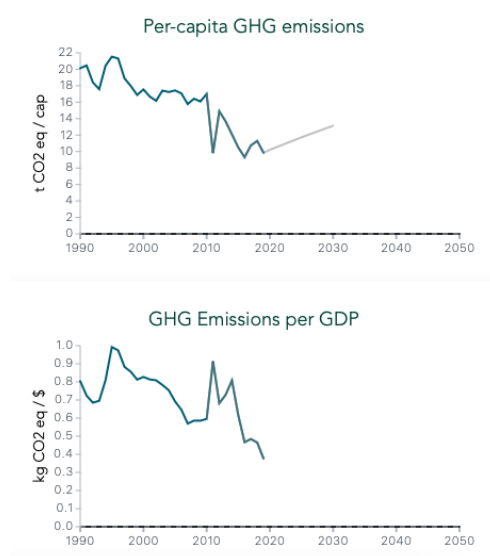
Children with autism and other special needs often experience trouble adapting to a lack of light.

Finally, outdated and unreliable energy infrastructure compounds the problem further, with the reliability of electricity systems remaining well below the regional average in Europe and Central Asia.¹¹⁴

Despite these challenges, from an environmental point of view, some progress

has been made in recent years. **Greenhouse gas emissions have declined since 2000 with an average annual negative growth of 4.5 per cent.**¹¹⁵ Key drivers for this include a decline in population and increasing energy prices, in addition to Government policy (see section x), leading to significant improvements in energy use and efficiency.^{116 117}

Fig.4 Since the early 2000s, Moldova has experienced a decrease in greenhouse gas emissions



5.2 The current energy mix

Natural gas accounts for more than half of Moldova's total primary energy supply, oil roughly a quarter and solid biomass one-fifth (Fig.x).¹¹⁸ Most natural gas is used for electricity and heat generation, whereas oil is the most important energy source for final

¹¹⁴ Ibid.

¹¹⁵ IEA (2022) Moldova Energy Profile
<https://www.iea.org/reports/moldova-energy-profile>

¹¹⁶ Government of the Republic of Moldova (2022) Updated NDC
https://unfccc.int/sites/default/files/NDC/2022-06/MD_Updated_NDC_final_version_EN.pdf

¹¹⁷ Ibid.

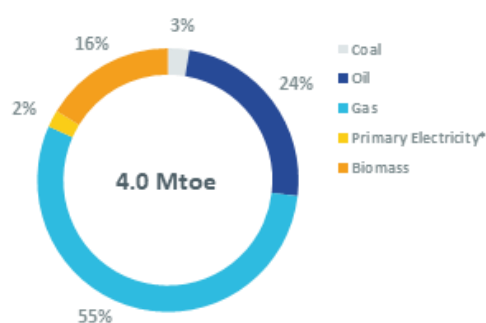
¹¹⁸ Enerdata (2022) Moldova Energy Information
<https://www.enerdata.net/estore/energy-market/moldova/>

consumers.¹¹⁹ **The current energy crisis has however increased the use of heavy oil for heating** by 35 to 40%, significantly increasing emissions.¹²⁰

Just 20% of Moldova’s energy demand is covered by domestic production, consisting almost fully of solid biomass (mostly wood products).¹²¹

The residential sector is the largest energy user, consuming mostly solid biofuels, followed by transport, which is the main driver in oil consumption growth.¹²²

Fig.5 Total consumption market share by energy (% , 2020)¹²³



Moldova’s primary electricity sources (around 4.4 TWh) are supplied by imports, either from Ukraine (4%) or from the Cuciurgani-Moldavskaya GRES (MGRES) gas-fired power plant (77%) located in the breakaway region of Transnistria.¹²⁴

5.3 Traditional energy

Traditional energy sources refers to any form of non-renewable resource, including all

petroleum- based fuels, natural gas and coal.¹²⁵

At present, Moldova imports over 99% of its oil (1.0 Mtoe in 2018, of which almost 80% is diesel and motor gasoline).¹²⁶ The country also imports all of its coal (0.09 Mtoe in 2018) and natural gas (2.1 Mtoe), mostly from Russia.¹²⁷



A power plant was pictured at sunrise in Chisinau, Moldova ©EPA/Dumitru Doru

The new Lasi-Ungheni-Chisinau gas interconnection pipeline to Romania aims to reduce dependence on Russian gas and also support Moldova’s integration into the EU electricity market, through interconnections with the Romanian electricity network.¹²⁸

The country's main thermoelectric power plants are located in Chişinău, Băiţi, and Tiraspol. Moldova also provides electricity to the southern regions of Ukraine and also to Bulgaria via transmission lines.

From an environmental perspective, fossil fuel emissions from oil, coal and natural gas are the main driver of climate change, and also endanger the health and wellbeing of children (6.3.2.c Air pollution).

¹¹⁹IEA (2022) Moldova Energy Profile

<https://www.iea.org/reports/moldova-energy-profile>

¹²⁰Power Technology (2022) Moldova faces winter darkness as Russia weaponises energy

<https://www.power-technology.com/features/moldova-gas-russia-transnistria/>

¹²¹Ibid.

¹²²Ibid.

¹²³Enerdata (2022) Moldova Energy Information

<https://www.enerdata.net/estore/energy-market/moldova/>

¹²⁴IEA (2022) Moldova Energy Profile

<https://www.iea.org/reports/moldova-energy-profile>

¹²⁵Ibid.

¹²⁶Ibid.

¹²⁷Ibid.

¹²⁸Balkan Insight (2020) Gas Pipeline Linking Moldova to Romania Nears Completion, 29 April 2020 <https://balkaninsight.com/2020/04/29/gas-pipeline-linking-moldova-to-romania-nears-completion/>

Thermal plants generate massive volumes of wastewater, laden with heavy metals and other pollutants which are being released into the environment, further threatening children's health (6.6.2b Safety impacts).^{129 130} As the climate crisis intensifies and water scarcity becomes more common, it is vital that Moldova expedites its transition to cleaner, greener energy sources.

5.4 Renewable energy

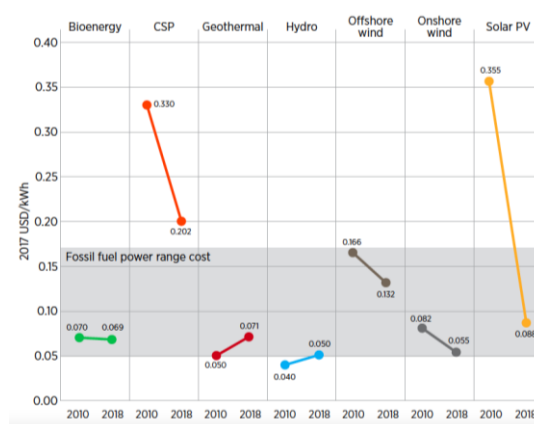
Renewable energy is energy derived from natural sources that are replenished at a higher rate than they are consumed, for example, solar, wind and hydropower.¹³¹

The cost of electricity from utility-scale renewable energy sources is now comparable to natural gas (Fig.6). As such, clean energy options, such as wind and solar, offer a cleaner alternative, which can also improve Moldova's energy security and independence.

In 2012, Moldova committed to a binding target of 17% of energy from renewable sources in gross final energy consumption by 2020 and 20% of the voluntary target set in the National Energy Strategy 2030.^{132 133}

Moldova has met the 2020 target, largely as a result of the high volume of biomass that is currently being used to heat homes.¹³⁴

Fig.6 Global levelized cost of electricity from utility-scale renewable power generation technologies (2010-2018)¹³⁵



In 2022 Moldovan energy regulator ANRE launched a 230MW of large-scale renewable energy projects, including 70MW for PV, of which 50MW will be allocated for projects on buildings, with 20MW to be set aside for ground-mounted facilities.¹³⁶ Another 15 MW is planned to be devoted to wind power, 100MW to cogeneration units based on biogas, 30MW to cogeneration units based on direct fuel combustion, and 5 MW to hydropower plants.¹³⁷

5.4.1 Biomass

More than one-quarter of the energy consumed in Moldova is from biomass products, used mostly to heat homes.¹³⁸

Biomass products usually consist of direct and indirect wood fuel or agricultural residual

¹²⁹ Qasam et al (2021) Removal of heavy metal ions from wastewater: a comprehensive and critical review <https://www.nature.com/articles/s41545-021-00127-0>

¹³⁰ Popescu, Francisc & Trumić, Milan & Cioabla, Adrian & Vujic, Bogdana & Stoica, Virgil & Trumic, Maja & Opris, Carmen & Bogdanovic, Grozdanka & Trif-Tordai, Gavrilă. (2022). Analysis of Surface Water Quality and Sediments Content on Danube Basin in Djerdap-Iron Gate Protected Areas. *Water*. 14. 2991. 10.3390/w14192991. https://www.researchgate.net/publication/364035181_Analysis_of_Surface_Water_Quality_and_Sediments_Content_on_Danube_Basin_in_Djerdap-Iron_Gate_Protected_Areas

¹³¹ UN (2022) What is renewable energy? <https://www.un.org/en/climatechange/what-is-renewable-energy>

¹³² Republic of Moldova (2022) National Energy Strategy 2030 https://www.spcr.cz/files/Moldova_EnStrategy_draft_12_full_310512.pdf

¹³³ IEA (2022) Moldova Energy Profile: Sustainable development <https://www.iea.org/reports/moldova-energy-profile/sustainable-development>

¹³⁴ Ibid.

¹³⁵ IRENA (2019) Moldova Renewables Readiness Assessment https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2019/Feb/IRENA_RRA_Moldov_a_2019_EN.pdf

¹³⁶ PV Magazine (2022) Moldova launches 230MW renewables auction <https://www.pv-magazine.com/2022/04/05/moldova-launches-230mw-renewables-auction/>

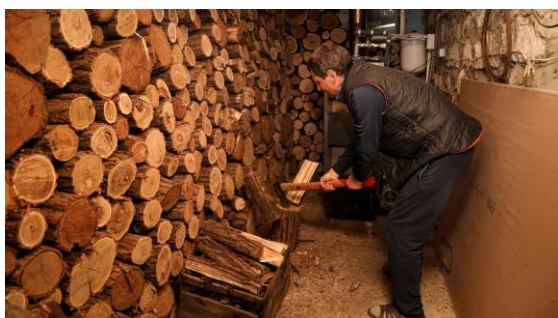
¹³⁷ Ibid.

¹³⁸ IEA (2022) Moldova Energy Profile: Sustainable development <https://www.iea.org/reports/moldova-energy-profile/sustainable-development>

biomass and are used almost completely for heating purposes.

The current energy crisis has only exacerbated Moldova's reliance on wood-based products for heating homes. In many cases, wood is the only affordable and available heating source for poorer families.¹³⁹

Despite being classed as a renewable resource, the burning of biomass still has a major environmental impact, which in turn, impacts on children. For example, burning wood can result in carbon emissions 2.5 times higher than natural gas and 30 percent higher than coal.¹⁴⁰ It also leads to air pollution and adverse health impacts for children (6.3.2c *Air pollution*) and an increased risk of fire and burns in the home (6.3.2 b. *Death and injury from climate-related disasters*). Secondly, harvesting trees for fuel leads to more carbon release than if they remained in the forests to grow, exacerbating deforestation and other forms of land degradation (4.2 *Land and water degradation*).



©Belfast Telegraph

¹³⁹ Belfast Telegraph (2022) Prices rocket and forests felled as people turn to firewood to heat homes 27 October 2022 <https://www.belfasttelegraph.co.uk/news/world-news/prices-rocket-and-forests-felled-as-people-turn-to-firewood-to-heat-homes-42099343.html>

¹⁴⁰ Pennsylvania State University (2021) Burning Wood? Caring for the Earth? <https://ecosystems.psu.edu/research/centers/private-forests/news/burning-wood-caring-for-the-earth>

¹⁴¹ World Bank (2018) Photovoltaic energy potential in Moldova <https://solargis.com/maps-and-gis-data/download/moldova>

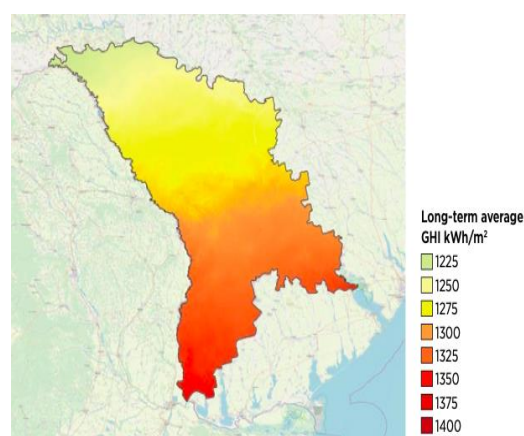
5.4.2 Solar energy

Moldova is the perfect candidate for solar energy generation. The country receives an average of 2,400 hours of sunshine annually¹⁴¹ Even during the winter months, the available sunlight would still be sufficient to power all homes across the country.

The greatest solar energy potential lies within the country's central and southern regions; solar also remains viable in the north (Map.7).¹⁴²

In recent years, several small (2 kW to 500 kW) solar projects have been built or are under construction across Moldova, with a cumulative capacity of around 4 MW.¹⁴³ Most units are mounted on the roofs of industrial, private and public buildings.

Map.7 Moldova's solar energy potential¹⁴⁴



Given Moldova's geographical position and falling technology costs, solar thermal installations, which capture heat energy, are

¹⁴² Ibid.

¹⁴³ IEA (2022) Moldova Energy Profile: Sustainable development <https://www.iea.org/reports/moldova-energy-profile/sustainable-development>

¹⁴⁴ IRENA (2019) Moldova Renewables Readiness Assessment https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2019/Feb/IRENA_RRA_Moldova_2019_EN.pdf

also becoming more economically feasible. This is particularly the case for public institutions with high water heating needs, including kindergartens and hospitals.

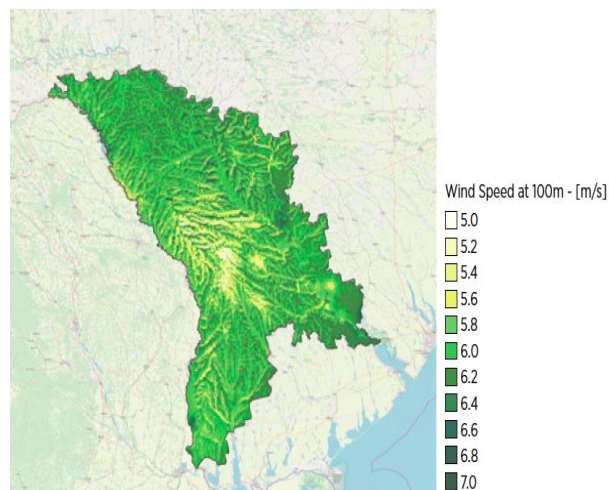
"Why is solar energy still so expensive in Moldova? We need to make it more affordable for families."

CRISTIAN BURLACENCO, 16 CAHUL

5.4.3 Wind Energy

Despite several industrial wind installations having been built in recent years with a total capacity of 35.6 MW, Moldova has yet to fully capitalise on its wind resources.¹⁴⁵

Map.8 Moldova's wind potential¹⁴⁶



The country has a medium-high wind power across much of the country, with an estimated 11.8GW in wind generation potential (Map.8).¹⁴⁷¹⁴⁸¹⁴⁹ At present, expansion is limited by the lack of electrical infrastructure capacity to handle the intermittency.¹⁵⁰

However, with the right investment, wind power has significant potential. In Moldova, wind occurs mostly at night. As such, it could be combined with solar power (during the day) to provide twenty-four hour clean energy.

5.4.4 Hydropower

Hydropower is another largely untapped clean energy resource for Moldova. At present, the country has just one operational plant, the Stanca-Costesti hydropower plant (HPP) on the Prut River and which has an installed capacity of 16 MW.¹⁵¹

¹⁴⁵ IEA (2022) Moldova Energy Profile: Sustainable development <https://www.iea.org/reports/moldova-energy-profile/sustainable-development>

¹⁴⁶ IRENA (2019) Moldova Renewables Readiness Assessment https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2019/Feb/IRENA_RRA_Moldova_2019_EN.pdf

¹⁴⁷ Global Wind Atlas (2022) Moldova <https://globalwindatlas.info/en/area/Moldova>

¹⁴⁸ UTM (2022) Moldova wind energy potential map <https://moldova.awstruepower.com>

¹⁴⁹ IRENA (2019) Moldova Renewables Readiness Assessment https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2019/Feb/IRENA_RRA_Moldova_2019_EN.pdf

¹⁵⁰ Ibid.

¹⁵¹ IEA (2022) Moldova Energy Profile: Sustainable development <https://www.iea.org/reports/moldova-energy-profile/sustainable-development>

Another plant exists on the Dniester River but its generation of 48 MW does not feed into the local market and therefore is not reflected in national energy statistics.¹⁵²

In recent years, several local and international investors have expressed willingness to invest in small HPPs on inland rivers.¹⁵³

Combined with other sources of renewable energy, such as solar and wind, hydropower can play an important role in Moldova's energy mix. A key benefit of hydropower is its ability to "store" other forms of renewable energy, allowing Moldova to better manage its energy supply and demand in a sustainable manner (Box.2).¹⁵⁴

Box.2 Creating a renewable energy "water battery"



A key challenge with renewable energy is the issue of intermittency; solar power is generated during the day and wind power is generally produced mostly at night. Pumped and traditional storage hydropower is one method of storing clean energy, for use throughout the day.

Pumped hydro: a form of hydropower that utilises two reservoirs at different levels of elevation. When demand is low, water can be pumped from the lower to the upper reservoir where it is stored. The water can then be released through a turbine, supplying electricity to the grid at times of need.

Traditional storage hydropower: uses a river dam to store water in a reservoir, that can then be used flexibly to provide base load power,

¹⁵²Ibid.

¹⁵³Morgan, E, F et al (2018) Sustainable hydropower in the 21st century <https://doi.org/10.1073/pnas.180942611>

154

6. THE IMPACT OF CLIMATE, ENVIRONMENT AND ENERGY ISSUES ON CHILDREN

6.1 An overview

Rising temperatures, increased water scarcity, flooding and pollution all impact on the health and wellbeing of Moldova's children. There are multiple reasons for this, including children are:

- **More susceptible to changes in temperature and their environment:** Children are less able to regulate body temperature in heatwaves and are at greater risk of hypothermia during cold spells. In a drought or in areas of high water scarcity, they are at greater risk of dehydration, malnutrition and water-borne disease.
- **At greater risk of violence, injury or death:** In a flood or storm, children are less able to physically protect themselves from immediate dangers as well indirect protection risks.
- **More vulnerable to environmental toxins:** Children, due to their small body sizes, proportionally intake more contaminants. In addition, their active growth and developmental processes

and multiple exposure pathways they face, make them more vulnerable.¹⁵⁵



©UNICEF/Moldova/2014/Gutu

Child poverty leaves children even more vulnerable to environmental shocks and stresses. Around 10% of Moldova's children currently live in extreme poverty.¹⁵⁶

Some of the most intense poverty is experienced by children living in rural areas in homes with more than three children, minority groups (including Roma and migrant/refugee children), and among those living with disabilities.^{157 158}

Child poverty leads to higher protection risks and a lack of access to essential services, such as in health, nutritious food, safe water and sanitation, a safe home and adequate education, making them particularly susceptible to environmental impacts. It also creates both physical and mental stress for both children and their families, leaving children more vulnerable to child labour, early marriage, abuse and neglect.

The following sections provide an overview of the key impacts of climate change and other

¹⁵⁵ Au WW. Susceptibility of children to environmental toxic substances. *Int J Hyg Environ Health.* 2002 Oct;205(6):501-3. doi: 10.1078/1438-4639-00179. PMID: 12455272.

¹⁵⁶ UNICEF (2022) Situation Analysis of children and adolescents in Moldova <https://www.unicef.org/moldova/media/8361/file/Situation%20Analysis%20of%20children%20and%20adolescents%20in%20the%20Republic%20of%20Moldova1.pdf>

¹⁵⁷ SIDA (2018) Multidimensional Poverty Assessment Moldova <https://cdn.sida.se/app/uploads/2022/04/15085758/2020-MDPA-Moldova.pdf>

¹⁵⁸ UNICEF (2022) Situation Analysis of children and adolescents in Moldova <https://www.unicef.org/moldova/media/8361/file/Situation%20Analysis%20of%20children%20and%20adolescents%20in%20the%20Republic%20of%20Moldova1.pdf>

environment-related hazards. These issues are summarised in Fig.1 (page.x).

6.2 Water, Sanitation and Hygiene (WASH)

6.2.1 An overview

For Moldova’s children, a change in climate is felt, first and foremost, through a change in water. During periods of heavy rain or drought, children are at risk, as both the quality and quantity of water available to them is under threat.

When disasters such as flooding, storms and landslides strike, they destroy or disrupt the water and sanitation services that children rely upon. This includes damaging and destroying toilets and wastewater systems, which may go on to contaminate water supplies and the surrounding environment. This in addition to other environmental degradation issues, including water pollution, is also impacting on water safety for children.

Water scarcity during the summer months, particularly in Moldova’s southern regions, limits safe sanitation and hygiene practices and may exacerbate the spread of infectious disease. Further details on some of these impacts are outlined in the sections below.

6.2.2 WASH impacts

a. Changes in water supply

Moldova’s most vulnerable children are the ones who still do not have access to safe water and sanitation services and live in the districts most impacted by climate hazards and other forms of environmental

degradation (Map.1). These districts include Cahul, Ștefan Vodă, Hîncești and Orhe.

Around 89% of Moldovans have access to basic water supply at home (i.e. a piped water connection, standpipe, protected borehole or well).



©UNICEF/UNI356687/Filippov

However, in rural areas, around 17% of families still lack access to basic water supply, using unprotected wells or other unsafe sources, leaving them highly vulnerable to water-borne disease and exposure to chemical contaminants.¹⁵⁹

Around 79% of households in Moldova have access to basic sanitation at home (such as a flushed toilet to a piped sewer or septic tank). In rural areas, 27% of households still lack access to safe sanitation systems, with many relying on unimproved, outdoor pit latrines.¹⁶⁰ Many of these are poorly maintained and freeze in winter, creating health and safety hazards for children.

Around 8% of Moldova’s schools still do not have access to centralised water and sewerage systems, with an estimated 50% of all pupils being exposed to poor water quality at school, leaving them vulnerable to water-borne illness and toxins.¹⁶¹ Water quality monitoring remains sporadic in both

¹⁵⁹WHO-UNICEF JMP (2022) Progress on household drinking water, sanitation and hygiene https://washdata.org/sites/default/files/2022-01/jmp-2021-wash-households_3.pdf

¹⁶⁰Ibid.

¹⁶¹UNICEF (2018) WASH in Schools Assessment

communities and schools, raising concerns around rural water safety.^{162,163}

Finally, around 70% of rural schools have external toilets, with just 16% having hot water available in their washrooms.¹⁶⁴

Cold water discourages safe handwashing practices, both at home and at school, despite being just as effective at removing pathogens.¹⁶⁵

Table.3 Access to basic WASH in Moldova (2020)¹⁶⁶

Indicator	Rural	Urban	Total
% access to at least basic water supply	83	97	89
% access to at least basic toilets	73	87	79
% of population with access to at least basic hand washing facilities (soap and water)	82	93	87

b. Safety impacts

Across Moldova, at least 24% of water supplies are thought to be unsafe for human consumption, with faecal contamination, chemical pollutants and other toxins prevalent in both surface and groundwater sources.¹⁶⁷

A summary of the key sources of pollution, and their impacts on children can be found in Table.4 and the sections below.

Faecal contamination

Flooding, water scarcity and water pollution all lead to an increase in the incidence of a range of water-borne illnesses, including E.Coli and other forms of diarrhoea.

Rising groundwater levels increase levels of faecal contamination from poorly constructed latrines and other sanitation facilities. In the case of flooding, the influx of water can damage or destroy non-resilient sanitation systems, spreading faecal waste and other contaminants across entire communities.

In addition, wastewater treatment stations in rural areas are often lacking. For example, all wastewater in Sorooca district currently drains into the Dniester River, which leads to the contamination of water for other districts downstream.¹⁶⁸

In addition to contaminating drinking water supplies, faecal contamination also leads to major nutrient imbalances across ecological systems, a process known as eutrophication, leading to toxic algal blooms and cyanobacteria growth which are harmful to children.¹⁶⁹

Finally, the pharmaceuticals, narcotics, stimulators and other contaminants, contained in human and animal faecal matter pollute drinking water with toxins, whilst also

¹⁶² Ibid.

¹⁶³ Dotarea și amenajarea grupurilor sanitare (2014) https://ms.gov.md/sites/default/files/legislatie/ordin_comun_135-13_din_24.02.14_amenajarea_grup_sanitare.pdf

¹⁶⁴ UNICEF (2022) Situation Analysis of children and adolescents in Moldova <https://www.unicef.org/moldova/media/8361/file/Situation%20Analysis%20of%20children%20and%20adolescents%20in%20the%20Republic%20of%20Moldova1.pdf>

¹⁶⁵ Michaels, B et al (2022) Water temperature as a factor in handwashing efficacy, Food Service Technology Volume2, Issue3 September 2002, Pages 139-149

<https://onlinelibrary.wiley.com/doi/full/10.1046/j.1471-5740.2002.00043.x#>

¹⁶⁶ WHO-UNICEF JMP (2022) Progress on household drinking water, sanitation and hygiene https://washdata.org/sites/default/files/2022-01/jmp-2021-wash-households_3.pdf

¹⁶⁷ Ibid.

¹⁶⁸ Ecohub (2022) Pollution of the Dniester River with faeces in Sorooca, Moldova <https://www.ecohubmap.com/hot-spot/pollution-of-the-dniester-river-with-faeces-in-sorooca-moldova/3tznfml8mr3jyc>

¹⁶⁹ NOAA (2022) What is eutrophication? <https://oceanservice.noaa.gov/facts/eutrophication.html>

disrupting ecosystems, creating toxic algal blooms and antibiotic-resistant bacteria.¹⁷⁰





©UNICEF Moldova

¹⁷⁰ G.C.A. Amos, L. Zhang, P.M. Hawkey, W.H. Gaze, E.M. Wellington (2014)

Functional metagenomic analysis reveals rivers are a reservoir for diverse antibiotic resistance genes, *Veterinary Microbiology*, Volume 171, Issues 3–4, 2014, Pages 441–447, ISSN 0378-1135
<https://doi.org/10.1016/j.vetmic.2014.02.017>

Table. 4 Key sources of water pollution and their impacts on children in Moldova

Pollution category	Example types	Key sources	Impacts on children
Faecal contamination 	Bacteria and other pathogens ¹⁷¹	<ul style="list-style-type: none"> ● Unprotected latrines and poorly maintained sewerage systems. ● Faecal contamination from farm animals. 	<ul style="list-style-type: none"> ● Diarrhoea and other forms of water-borne disease ● Reduced nutrient absorption and stunted growth ● Decreased cognitive development and school attainment.
	Pharmaceuticals, narcotics and stimulants ¹⁷²		<ul style="list-style-type: none"> ● Hormone disruption in children, including early puberty and thyroid issues. ● Antibiotic resistant bacteria ● Impacts on mood and mental health ● Obesity.
Chemical contamination 	Pesticides ¹⁷³	<ul style="list-style-type: none"> ● Agriculture ● Household gardens 	<ul style="list-style-type: none"> ● Hormone disruption in children, including early puberty, obesity and thyroid issues. ● Low birth weights, impaired cognitive functioning and development.
	Fertilisers ¹⁷⁴		<ul style="list-style-type: none"> ● Promote algal blooms, toxic to children. ● Hormone disruption, including thyroid disruption ● Cancer
	Salt ^{175 176}	<ul style="list-style-type: none"> ● Agriculture fertilisers ● Road de-icing salts ● Mining operations 	<ul style="list-style-type: none"> ● Hypertension ● Reduced cognitive development in children.

¹⁷¹ Gilmartin AA, Petri WA Jr. Exploring the role of environmental enteropathy in malnutrition, infant development and oral vaccine response. *Philos Trans R Soc Lond B Biol Sci.* 2015 Jun 19;370(1671):20140143. doi: 10.1098/rstb.2014.0143. PMID: 25964455; PMCID: PMC4527388


¹⁷² La Merrill M, Birnbaum LS. Childhood obesity and environmental chemicals. *Mt Sinai J Med.* 2011 Jan-Feb;78(1):22-48. doi: 10.1002/msj.20229. PMID: 21259261; PMCID: PMC3076189.

¹⁷³ Meeker JD. Exposure to environmental endocrine disruptors and child development. *Arch Pediatr Adolesc Med.* 2012 Jun 1;166(6):E1-7. doi: 10.1001/archpediatrics.2012.241. PMID: 22664748; PMCID: PMC3572204

¹⁷⁴ Ahmed M, Rauf M, Mukhtar Z, Saeed NA. Excessive use of nitrogenous fertilisers: an unawareness causing serious threats to environment and human health. *Environ Sci Pollut Res Int.* 2017 Dec;24(35):26983-26987. doi: 10.1007/s11356-017-0589-7. Epub 2017 Nov 14. PMID: 29139074.

¹⁷⁵ Akter (2019) Impact of drinking water salinity on children's education <https://www.sciencedirect.com/science/article/abs/pii/S0048969719330311?via%3Dihub>

¹⁷⁶ Ibid.

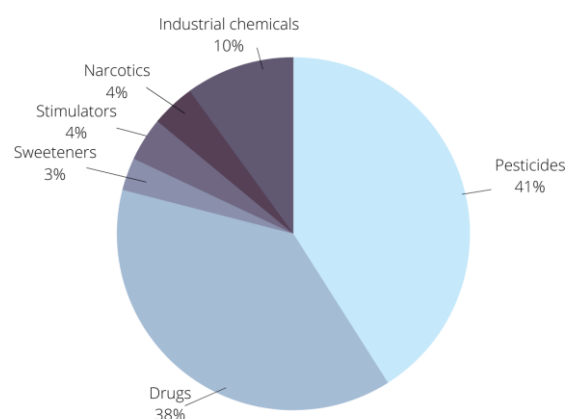
	Lead ¹⁷⁷	<ul style="list-style-type: none"> Corrosion of old pipes and plumbing fixtures Paint, batteries, electronic and household waste Unprotected landfills 	<ul style="list-style-type: none"> Lifelong neurological, cognitive and physical impairment. Mental health and behavioural problems and an increase in crime and violence Liver and kidney problems
	Benzines ¹⁷⁸	<ul style="list-style-type: none"> Gasoline and petroleum products Hazardous waste sites 	<ul style="list-style-type: none"> Fetal impacts, including low birth weights, skeletal malformations, and increased incidence of miscarriage Decreases in the numbers of blood-forming cells Respiratory difficulties including bronchitis, asthma, and wheezing Cancer, including blood and lymph cancers.
<p>Other forms of contamination</p> 	Microplastics ¹⁷⁹	<ul style="list-style-type: none"> Plastic waste and unprotected landfills 	<ul style="list-style-type: none"> Hormone disruption, including early puberty Low birth weights Impaired cognitive functioning and development

Chemical contamination

A 2020 study found that 139 organic contaminants belonging to various chemical classes were detected in the Dniester River Basin, Moldova’s main source of water (Fig.7).¹⁸⁰

These contaminants included a mix of pesticides, drugs, narcotics, stimulators and other chemicals. The highest cumulative concentration of contaminants was observed in surface water from the Byk River, a tributary of the Dniester, just north of Chisinau.¹⁸¹

Fig.7 % share of contaminant found in the Dniester River, Moldova (2020)¹⁸²



Pesticides have been found to lead to hormone disruption in children, including early puberty, obesity and thyroid issues. Girls are particularly affected. Mothers exposed to pesticides, either through water or food, have similarly been found to have an increased risk of having an underweight baby, with a higher chance of Impaired cognitive

¹⁷⁷ UNICEF (2020) The toxic truth: Children’s exposure to lead pollution undermines a generation of future potential <https://www.unicef.org/reports/toxic-truth-childrens-exposure-to-lead-pollution-2020>

¹⁷⁸ EPA (2009) U.S. EPA, Toxicity and Exposure Assessments for Children’s Health https://archive.epa.gov/region5/teach/web/pdf/benz_summary.pdf

¹⁷⁹ Ibid.

¹⁸⁰ Ibid.

¹⁸¹ Diamanti KS, Alygizakis NA, Nika MC, et al. Assessment of the chemical pollution status of the Dniester River Basin by wide-scope target and suspect screening using mass spectrometric techniques. *Analytical and Bioanalytical Chemistry*. 2020 Aug;412(20):4893-4907. DOI: 10.1007/s00216-020-02648-y. PMID: 32347361

¹⁸² Ibid.

functioning and development.¹⁸³ Benzenes and other toxic chemicals from fossil fuels have also been found to have similar impacts, in addition to an increased risk of childhood cancer.¹⁸⁴

More than 193,000 children in Moldova, a third of the child population, are thought to have more than 5mg of lead in their blood.¹⁸⁵

Lead is a potent neurotoxin that causes irreparable harm to children's brains.¹⁸⁶ It is particularly destructive to babies and children under the age of 5 as it damages their brain before they have had the opportunity to fully develop, causing them lifelong neurological, cognitive and physical impairment.¹⁸⁷

Childhood lead exposure has also been linked to mental health and behavioural problems and an increase in crime and violence. Older children suffer severe consequences, including increased risk of kidney damage and cardiovascular diseases in later life.¹⁸⁸

"We know our wastewater is going straight into the Prut River, where we also get our drinking water. We know this is bad for our health, but what can we do? "

**NASTEA STANILIA, 17
CAHUL**

¹⁸³ Meeker JD. Exposure to environmental endocrine disruptors and child development. Arch Pediatr Adolesc Med. 2012 Jun 1;166(6):E1-7. doi: 10.1001/archpediatrics.2012.241. PMID: 22664748; PMCID: PMC3572204

¹⁸⁴ US EPA (2009) U.S. EPA, Toxicity and Exposure Assessments for Children's Health https://archive.epa.gov/region5/teach/web/pdf/benz_summary.pdf

¹⁸⁵ UNICEF (2020) The toxic truth Children's exposure to lead pollution undermines a generation of future potential

Microplastics

Microplastics and other contaminants have a devastating impact on health (Fig.x).¹⁸⁹ These contaminants have the greatest impact on children, especially babies where they accumulate in greater concentrations.¹⁹⁰

Children's immature defence systems and developing organ systems leave them particularly vulnerable to microplastics and other pollution.

Box. 5 What are microplastics?

Microplastics are fragments of any type of plastic less than 5 mm in length. Most are so small that they are invisible to the naked eye. They enter the water, soil and air through plastic litter, cosmetics, clothing, and industrial processes. A wide range of research has been conducted to investigate what microplastics do once inside the human body.

Toxicological studies have reported that microplastics accumulate in the liver and kidneys, causing both inflammation and changes in metabolism. They have been closely linked to cancer and antimicrobial resistant bacteria. They are also released into the environment through faecal matter, an issue which is exacerbated when latrines are flooded or collapse.

c. Impacts on dignity and wellbeing

Toilets and warm, safe water for bathing and handwashing are imperative for child dignity

<https://www.unicef.org/reports/toxic-truth-childrens-exposure-to-lead-pollution-2020>

¹⁸⁶ Ibid.

¹⁸⁷ Ibid.

¹⁸⁸ Ibid.

¹⁸⁹ UNEP (2021) From Pollution to Solution

<https://www.unep.org/resources/pollution-solution-global-assessment-marine-litter-and-plastic-pollution>

¹⁹⁰ Ibid.

and wellbeing. Children from poorer rural families, without adequate WASH access, may be unable to sufficiently clean themselves. As such they may be at an increased risk of being bullied or taunted.¹⁹¹ This includes women and girls who are unable to practise safe menstrual hygiene management, leading to protection concerns, including school absenteeism.¹⁹² This in time, leads to reductions in performance and attainment for these children and impacts on future happiness and economic well being.

6.3 Health

6.3.1 Overview

Over the past decade, Moldova has made significant progress in improving child health and reducing mortality rates. The current under-5 mortality rate stands around 14 per 1000 children, with the majority of deaths still occurring among infants.¹⁹³ Despite this progress, many challenges still remain, and the country continues to experience some of the worst maternal and child health outcomes in Europe.¹⁹⁴

The leading cause of death among Moldova’s children are accidents, poisoning and injuries and respiratory infections (including pneumonia). All of these can be closely linked with air and water pollution, and

other climate-related hazards such as extreme cold and flooding.¹⁹⁵

A 2020 WHO assessment found that the implementation of quality full coverage health services remains a challenge, with the number of paediatricians and the number of hospital beds declining between 2014 to 2019.¹⁹⁶ The principle of equal access to public health services for all citizens is enshrined in the Republic of Moldova’s national legislation.¹⁹⁷ However, despite compulsory health insurance, at least 12% of the population still lack medical insurance.¹⁹⁸

Table.5 Key health indicators for Moldova¹⁹⁹

Indicator	Value
Infant mortality rate (deaths per 1,000 live births)	12
Under-5 mortality rate (deaths per 100,000 live births)	14
Maternal mortality ratio (deaths per 100,000 live births)	19

¹⁹¹ Johnson (2019) The implications of bullying and trauma on impoverished populations
<https://files.eric.ed.gov/fulltext/EJ1236628.pdf>

¹⁹² UNICEF (2019) Guidance on Menstrual Hygiene Management
<https://www.unicef.org/media/91341/file/UNICEF-Guidance-menstrual-health-hygiene-2019.pdf>

¹⁹³ Ibid.

¹⁹⁴ UN IGME (2020) Under-5 Mortality Rate
<https://data.unicef.org/country/mda/>

¹⁹⁵ UNICEF (2022) Situation Analysis of children and adolescents in Moldova

<https://www.unicef.org/moldova/media/8361/file/Situation%20Analysis%20of%20children%20and%20adolescents%20in%20the%20Republic%20of%20Moldova!.pdf>

¹⁹⁶ WHO (2020) Assessment: Republic of Moldova

<https://apps.who.int/iris/rest/bitstreams/1463903/retrieve>

¹⁹⁷ Republic of Moldova (1994) Constitution of the Republic of Moldova
<https://cis-legislation.com/cis/moldova/legislation.html>

¹⁹⁸ UNICEF (2018) Child centred climate vulnerability analysis
<https://www.unicef.org/moldova/media/1261/file/Child-Centered-Climate-Vulnerability-assesment.pdf>

¹⁹⁹ UNICEF (2020) Moldova Health Data
<https://data.unicef.org/country/mda/>



©UNICEF Moldova

In 2023, health insurance costs are expected to increase to around \$600 per person, which for many families working in agriculture or the informal sector, is unaffordable.

The majority of uninsured persons live in rural areas and only half of the Roma population are insured.²⁰⁰ There is also still a lack of care services for vulnerable children, especially children with disabilities, chronic or terminal illnesses.²⁰¹

Health deprivations, including poor physical health and a lack of access to quality healthcare services, increases childrens' vulnerability to climate change. Climate change and environmental degradation threaten to place an additional burden on Moldova's healthcare systems. Unless healthcare services can be made more resilient to climate shocks and stresses, this has the potential to undermine decades of health progress.

An outline of some of the health-related impacts of climate change and environmental change on Moldova's children is listed below.

²⁰⁰ Ibid.

²⁰¹ WHO (2020) Assessment: Republic of Moldova <https://apps.who.int/iris/rest/bitstreams/1463903/retrieve>

²⁰² NHS (2022) Keeping your baby safe during hot weather <https://www.nhs.uk/conditions/baby/first-aid-and-safety/safety/safety-in-the-sun/>

²⁰³ Xu Z, Etzel RA, Su H, Huang C, Guo Y, Tong S. Impact of ambient temperature on children's health: a systematic review. *Environ Res.*

6.3.2 Health impacts

a. Extreme hot and cold temperatures

Extreme heat

Extreme heat, exacerbated by climate change and extreme cold spells is particularly dangerous for children. Babies and young children are especially vulnerable to dehydration, heat stroke and hypothermia.²⁰²

Both extreme hot and cold temperatures mainly affect cases of infectious diseases among children, including water and food-borne diseases and respiratory diseases.²⁰³

Paediatric allergies, such as eczema, are also sensitive to both temperature extremes, causing major discomfort among children.²⁰⁴

During heat waves, the incidences of renal disease, fever and electrolyte imbalance among children have also been found to increase significantly.²⁰⁵

Extreme heat also increases the incidence of pre-eclampsia in pregnant women and has been linked to low birth weights in infants ([6.4.2 Undernutrition](#)).²⁰⁶

b. Death and injury from climate-related disasters

Direct death and injury from climate-related disasters in Moldova remains low at present. However, this may change in the coming years as the climate crisis intensifies.

The World Health Organisation observes that flooding currently poses the greatest threat to health, "having longer lasting and more far-reaching effects on their victims than other

2012 Aug;117:120-31. doi: 10.1016/j.envres.2012.07.002. Epub 2012 Jul 23. PMID: 22831555

²⁰⁴ Ibid.

²⁰⁵ Ibid.

²⁰⁶ Shashar et al (2020) Temperature and preeclampsia <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0232877>

climate related disasters.”²⁰⁷ Moldova’s children are especially vulnerable to fires and flash floods which have become more frequent in the past few decades as a result of rainfall extremes . Flooding can lead to drowning, injury and disease, and heavy rainfall can also lead to greater rates of erosion and incidence of landslides which has the potential to lead to mass casualties.²⁰⁸

Slower-onset hazards, caused by heavy rains, such as waterlogging, can cause older or poorly constructed buildings to deteriorate, making them more susceptible to collapse. This poses a direct danger to families, particularly children.

Finally, wildfires and a lack of access to clean energy in the home, also increases the risk, also increases the risk of burn injuries and death.

c. Air pollution

Air quality across Moldova, particularly around urban centres, remains a key concern, particularly in the summer months, where air pollution is clearly visible across the major cities (*4.1. Air pollution*).²⁰⁹

Children are also disproportionately affected by the impacts of air pollution.²¹⁰ Children breathe twice as fast, taking in more air per unit of body weight, compared to adults.

Their respiratory airways are smaller than adults, so infections are more likely to cause blockages.²¹¹ In addition, children’s bodies are still growing and developing and their detoxification mechanisms are not fully developed. Harm to their organs in this delicate and critical stage can have lifelong implications.²¹² For example, lung damage in early childhood due to air pollution can be irreparable and affect lung capacity through to adulthood.

Pregnant women are more likely to give birth prematurely and their babies are also prone to be underweight.²¹³

Air pollution, both indoor and outdoor, has been found to lead to an increased incidence of cancers, asthma and lower respiratory infections in children.²¹⁴ For example,

particulate matter (PM2.5) is a leading cause of cancer in both adults and children.²¹⁵

Similarly, Sulphur dioxide has been linked to respiratory diseases such as Bronchitis and Asthma.^{216 217}

Indoor air pollution from wood-burning stoves and second hand smoke from parents’ tobacco consumption, has also been linked to an increased incidence of respiratory disease, asthma and cancer in children.²¹⁸

²⁰⁷ Ibid.

²⁰⁸ Shaker, Richard & Sirodov, Igor. (2011). Landslide Susceptibility in the Republic of Moldova: A Landscape and Multivariate Approach for Regional Assessment. Papers of the Applied Geography Conference. 34. 288-298

²⁰⁹ Government of the Republic of Moldova (2022) Updated NDC https://unfccc.int/sites/default/files/NDC/2022-06/MD_Updated_NDC_final_version_EN.pdf

²¹⁰ UNICEF (2016) Pollution: 300 million children breathing toxic air - UNICEF report <https://www.unicef.org/press-releases/pollution-300-million-children-breathing-toxic-air-unicef-report>

²¹¹ Ibid.

²¹² Ibid.

²¹³ UNICEF (2019) Clean the air for children https://www.unicef.org/sites/default/files/2019-02/Clean_the_Air_for_Children_Executive_summary_ENG.pdf

²¹⁴ EEA (2021) Air pollution: how it affects our health <https://www.eea.europa.eu/themes/air/health-impacts-of-air-pollution>

²¹⁵ IARC (2013) Outdoor air pollution is a lead cause of cancer <https://www.iarc.who.int/news-events/iarc-outdoor-air-pollution-a-leading-environmental-cause-of-cancer-deaths/>

²¹⁶ Herbarth O, Fritz G, Krumbiegel P, Diez U, Franck U, Richter M. Effect of sulphur dioxide and particulate pollutants on bronchitis in children--a risk analysis. *Environ Toxicol.* 2001 Jun;16(3):269-76. doi: 10.1002/tox.1033. PMID: 11409199

²¹⁷ Smargiassi A, Kosatsky T, Hicks J, Plante C, Armstrong B, Villeneuve PJ, Goudreau S. Risk of asthmatic episodes in children exposed to sulphur dioxide stack emissions from a refinery point source in Montreal, Canada. *Environ Health Perspect.* 2009 Apr;117(4):653-9. doi: 10.1289/ehp.0800010. Epub 2008 Oct 21. PMID: 19440507

²¹⁸ Ibid.

d. Vector-borne disease

Children are prone to vector-borne diseases because they spend more time outdoors and they are closer to the ground, where vector species commonly gather.²¹⁹ As Moldova's climate continues to warm, the country is likely to see an increase in vector-borne disease transmission and spread.²²⁰

Warmer temperatures increase bite rates and transmission.²²¹ Rising temperatures, for example, lead to higher proliferation, faster oviposition cycles and egg laying and increased feeding habits.²²²

Such impacts are already being observed in south-eastern Europe. In 2010, an unprecedented upsurge in West Nile fever infections was reported across most countries, preceded by extreme hot spells in the region.²²³ High temperature anomalies in following years were also linked with recurrent outbreaks.²²⁴

The increased incidence of Tick-borne encephalitis (TBE) in eastern Europe since the 1990s has also been attributed to increasing temperatures.²²⁵

e. Infectious disease

Water-borne disease

Unless urgent action is taken to address gaps in rural sanitation, the impacts of drought and flooding will almost certainly lead to an increase in water-borne illnesses for Moldova's children.

For example, there is strong evidence that climate change is aiding the spread of water-borne vibrio diseases such as gastroenteritis due to rising temperatures.²²⁶ Similarly, increasing temperatures have been linked to the proliferation of E.coli, cryptosporidiosis and other pathogens, increasing rates of disease and mortality amongst children.^{227,228,229}

During the dry season, as wells and boreholes dry up, critical sanitation and hygiene practices, such as handwashing and toilet cleaning, may also become more challenging, facilitating the spread of disease.²³⁰

²¹⁹ Bennett CM, Friel S. Impacts of Climate Change on Inequities in Child Health. *Children (Basel)*. 2014 Dec 3;1(3):461-73. doi: 10.3390/children1030461. PMID: 27417491; PMCID: PMC4928733

²²⁰ Rocklov and Dubrow (2020) Climate change: an enduring challenge for vector-borne disease <https://www.nature.com/articles/s41590-020-0648-y>

²²¹ Ibid.

²²² Ibid.

²²³ EEA (2016) Vector-borne diseases <https://www.eea.europa.eu/data-and-maps/indicators/vector-borne-diseases-2/assessment>

²²⁴ Ibid.

²²⁵ Daniel et al (2018) Increased risk of tick-borne encephalitis in warmer temperatures <https://www.frontiersin.org/articles/10.3389/fcimb.2018.00090/full>

²²⁶ Moore et al (2017) El Niño and the shifting geography of cholera in Africa <https://www.pnas.org/doi/full/10.1073/pnas.1617218114>

²²⁷ Philipsborn R, Ahmed SM, Brosi BJ, Levy K. Climatic Drivers of Diarrheagenic Escherichia coli Incidence: A Systematic Review and Meta-analysis. *J Infect Dis*. 2016 Jul 1;214(1):6-15. doi: 10.1093/infdis/jiw081. Epub 2016 Feb 29. PMID: 26931446; PMCID: PMC4907410

²²⁸ Britton E, Hales S, Venugopal K, Baker MG. The impact of climate variability and change on cryptosporidiosis and giardiasis rates in New Zealand. *J Water Health*. 2010 Sep;8(3):561-71. doi: 10.2166/wh.2010.049. Epub 2010 Mar 9. PMID: 20375485

²²⁹ Azage M, Kumie A, Worku A, C Bagtzoglou A, Anagnostou E. Effect of climatic variability on childhood diarrhea and its high risk periods in northwestern parts of Ethiopia. *PLoS One*. 2017 Oct 26;12(10):e0186933. doi: 10.1371/journal.pone.0186933. PMID: 29073259; PMCID: PMC5658103

²³⁰ UNICEF (2016) Thirsting for a Future https://reliefweb.int/sites/reliefweb.int/files/resources/UNICEF_Thirsting_for_a_Future_REPORT.pdf



©UNICEF/Moldova/2017/Foca

Food-borne disease

Numerous recent studies have documented the links between climate change and reductions in food safety, which have the potential to create major health and nutrition impacts for children. **As such, as temperatures continue to rise in Moldova, so too will the risk of food-borne disease.**²³¹

There are multiple reasons for this, including:

- **Increased pathogen prevalence:** Food spoils more rapidly in warmer temperatures, with bacteria such as *E. coli*, campylobacter and salmonella flourishing in warmer temperatures.²³² Livestock that are stressed at higher temperatures have also been found to shed larger amounts of enteric pathogens, affecting pathogen prevalence in crops, water and produce.²³³
- **Changes in food safety and storage practices:** These practices may become

more challenging in warmer climates, particularly for those rural households with intermittent access to electricity, for cooling and refrigeration. Cleaning practices may also be reduced due to extreme heat and water scarcity.

- **Increased toxins in food:** Warmer temperatures lead to the increased absorption of heavy metals by crops and livestock.^{234 235} Increased climate-stress may also lead to additional fertiliser and pesticide use to maintain yields. Children's small bodies leave them particularly vulnerable to these toxins, with major health repercussions.²³⁶²³⁷



©UNDP Moldova

6.4 Food security and nutrition

6.4.1 Food security

Over half of Moldova's population live in rural areas, and more than 80% of households living in poverty depend on the agriculture

²³¹ Ibid.

²³² van Elsas JD, Semenov AV, Costa R, Trevors JT. Survival of *Escherichia coli* in the environment: fundamental and public health aspects. *ISME J.* 2011 Feb;5(2):173-83. doi: 10.1038/ismej.2010.80. Epub 2010 Jun 24. Erratum in: *ISME J.* 2011 Feb;5(2):367. PMID: 20574458; PMCID: PMC3105702

²³³ Keen et al (2003.) Effect of exogenous glucocorticoids and dietary change on winter and summer STEC 0157 faecal shedding www.ars.usda.gov/research/publications/publication/?seqNo115=15342

²³⁴ Alam, Md. (2020). Impacts of heavy metal feed contaminants in cattle farming https://www.researchgate.net/publication/341787485_Impacts_of_heavy_metal_feed_contaminants_in_cattle_farming

²³⁵ Yasmine A. Farhat, Soo-Hyung Kim, Angelia L. Seyfferth, Long Zhang, Rebecca B. Neumann, Altered arsenic availability, uptake, and allocation in rice under elevated temperature, *Science of The Total Environment*, 10.1016/j.scitotenv.2020.143049, 763, (143049), (2021)

²³⁶ Sanobar Iqbal, Mujahid Farid, Muhammad Zubair, Zaki Ul Zaman Asam, Shafaqat Ali, Muhammad Abubakar, Sheharyar Farid, Muhammad Rizwan, Efficacy of Various Amendments for the Phytomanagement of Heavy Metal Contaminated Sites and Sustainable Agriculture. A Review, *Managing Plant Production Under Changing Environment*, 10.1007/978-981-16-5059-8, (239-272), (2022).

²³⁷ Duchenne-Moutien RA, Neetoo H. Climate Change and Emerging Food Safety Issues: A Review. *J Food Prot.* 2021 Nov 1;84(11):1884-1897. doi: 10.4315/JFP-21-141. PMID: 34185849

sector for their main source of income.²³⁸ According to the National Bureau of Statistics, the risk of food insecurity is highest for low income households with children. For example, average food expenditure in households with 3 or more children was found to comprise 49% of total household expenditure in (NBS, 2020a).

In recent years, increasingly erratic weather patterns, combined with the ongoing energy crisis, have resulted in harvest losses, which in turn have led to increasing food prices and food insecurity for the poorest families.²³⁹ The greatest increase in food prices have been seen for vegetables (44%), vegetable oil (34%) and eggs (23%). This may lead to changes in both the quantity and diversity of food consumed, with implications for child nutrition.²⁴⁰

Projections of higher temperatures and variable rainfall will heavily impact upon yields of rainfed crops that currently comprise 87 percent of Moldova's agricultural production.²⁴¹ Increased demand for irrigation combined with reduced water supply overall are also likely to lead to irrigation shortages, reducing production further and placing a greater strain on rural livelihoods.

Higher temperatures and drought are also set to impact on the livestock sector (primarily poultry, cattle and sheep), both directly, by compromising animal health, and indirectly, by reducing feed availability and quality.

²³⁸NBS (2020) The children of Moldova, UNICEF 2020, available at: <https://www.unicef.org/moldova/rapoarte/Copiii-moldovei-0>

²³⁹USAID (2017) Climate Risk Profile <https://www.climate-links.org/resources/climate-risk-profile-moldova>

²⁴⁰UNICEF (2022) Situation Analysis of children and adolescents in Moldova <https://www.unicef.org/moldova/media/8361/file/Situation%20Analysis%20of%20children%20and%20adolescents%20in%20the%20Republic%20of%20Moldova!.pdf>

²⁴¹Ibid.

Climate change will likely lead to a 4–7 percent decline in Moldova's pasture productivity by 2040, with implications for rural livelihoods and child nutrition.²⁴²



© UNICEF Moldova

6.4.2 Undernutrition

An overview

A triple burden of undernutrition currently affects Moldova's children. Around 5% of children are undernourished and another 5% are considered obese, while micronutrient deficiencies often permeate both cohorts.²⁴³

Sub-optimal infant and young child feeding and care practices are prevalent across the country, increasing infant's vulnerability to undernutrition and disease. Just 36% of infants below 6 months old are exclusively breastfed. Many children also consume a monotonous diet characterised by bread, rice, wheat, dairy and meat.²⁴⁵ Despite the country producing large volumes of fruit and

²⁴²World Bank (2013) Reducing the vulnerability of Moldova's Agricultural Systems to Climate Change <https://openknowledge.worldbank.org/handle/10986/16199>

²⁴³UNICEF (2020) Moldova Nutrition Data <https://data.unicef.org/country/mda/>

²⁴⁴UNICEF (2022) Situation Analysis of children and adolescents in Moldova <https://www.unicef.org/moldova/media/8361/file/Situation%20Analysis%20of%20children%20and%20adolescents%20in%20the%20Republic%20of%20Moldova!.pdf>

²⁴⁵Andoni A. & Ciobanu E., (2018), Assessing the eating habits of the resident population in the Republic of Moldova, Sate University of medicine and Pharmaceuticals, Nicolae Testemițanu, 2018

vegetables for export, these are consumed in small quantities by the local people, leading to vitamin deficiencies.²⁴⁶

Table.6 Key nutrition indicators for Moldova²⁴⁷²⁴⁸

Indicator	Value
Exclusive breastfeeding % (0-5 months)	61
Stunting % (Height for age)	5
Childhood obesity %	5

As the cost of fresh produce continues to rise, the regular consumption of unhealthy foods such as fried snacks, sweets and sugar sweetened beverages is also of significant concern.²⁴⁹ Childhood diabetes and other Non-Communicable Diseases (NCDs) have increased in recent years.

Climate-related impacts

Climate change and environmental degradation have multiple impacts on child nutrition.

Firstly, heat waves during pregnancy have been found to lead to a reduction in infant birth weight by an average of 4-20 grams, due to reductions in food availability and heat stress.^{250 251} Children aged 0-5, affected by drought, and other climate-related hazards,

are more likely to be underweight, due to direct reductions in food supply and indirect impacts on household income.²⁵²

Conversely, reductions in local food supply can also lead to increased obesity and Non-Communicable Diseases, such as diabetes, as a result of an increased reliance on processed food imports.²⁵³ In-utero and child undernutrition have been closely linked with increased NCDs in adulthood.²⁵⁴ There is growing evidence that maternal obesity is a risk factor for child obesity through a pathway related to foetal overnutrition, meaning that climate-related impacts can be passed down from generation to generation.²⁵⁵

Diarrhoea, pneumonia and other infectious diseases, exacerbated by climate change, may also increase undernutrition, and vice versa, by simultaneously increasing child vulnerability to climate change and other environmental hazards. Many of these ailments are exacerbated by climate change (*6.3 Health*).

A lack of basic sanitation access and the subsequent faecal contamination of water sources, can also lead to an increase in undernutrition. This can happen through an increase in water-borne disease and more chronic ailments, such as environmental enteropathy, where constant faecal-oral water contamination results in the blunting of

²⁴⁶ NBS (2021d) Analiza sărăciei monetare și a bunăstării gospodăriilor cu copii în baza rezultatelor Cercetării Bugetelor Gospodăriilor Casnice din 2020 Raport analitic Chișinău, 2021.

²⁴⁷ UNICEF (2020) Moldova Nutrition Data <https://data.unicef.org/country/mda/>

²⁴⁸ UNICEF (2022) Situation Analysis of children and adolescents in Moldova <https://www.unicef.org/moldova/media/8361/file/Situation%20Analysis%20of%20children%20and%20adolescents%20in%20the%20Republic%20of%20Moldova1.pdf>

²⁴⁹ Ibid.

²⁵⁰ Mabel Andalon, João Pedro Azevedo, Carlos Rodríguez-Castelán, Viviane Sanfelice, Daniel Valderrama-González, Weather Shocks and Health at Birth in Colombia, World Development, Volume 82, 2016,

Pages 69-82, ISSN 0305-750X, <https://doi.org/10.1016/j.worlddev.2016.01.015>

²⁵¹ Molina O, Saldarriaga V. The perils of climate change: In utero exposure to temperature variability and birth outcomes in the Andean region. *Econ Hum Biol.* 2017 Feb;24:111-124. doi: 10.1016/j.ehb.2016.11.009. Epub 2016 Nov 28. PMID: 27984771

²⁵² Rodríguez-Llanes et al (2011) Child malnutrition and recurrent flooding <https://bmjopen.bmi.com/content/1/2/e000109>

²⁵³ An R, Ji M, Zhang S. Global warming and obesity: a systematic review. *Obes Rev.* 2018;19(2):150-163

²⁵⁴ Adair, L. S., Fall, C. H. D., Osmond, C., Stein, A. D., Martorell, R., Ramirez-Zea, M.,...Victoria, C. G. (2013). Associations of linear growth and relative weight gain during early life with adult health and human

²⁵⁵ Ibid.

intestinal absorption and causes chronic inflammation and stunting in children.²⁵⁶

6.5 Education

6.5.1 An overview

In Moldova, education is compulsory and is free of charge, with the Government ensuring a standard package of educational services for pre-school, primary, lower and upper secondary, and high school education.²⁵⁷

Over the past decade, access to education, particularly secondary education, has greatly improved. Average net primary level enrolment averages 99% across the country, whilst upper secondary attendance stands around 68%.²⁵⁸

Table.7 Key education indicators for Moldova²⁵⁹

Indicator	Value
Adjusted net attendance rate for children of primary school age (%)	99
Adjusted net attendance rate for children of upper secondary school age (%)	68

However, despite this progress, **access to quality education and secondary school completion still remain a challenge for many of Moldova’s poorest children.** Traditional teaching styles, combined with low salaries and focus on instruction (rather than

participatory learning), are some of the key issues that impact teaching quality.²⁶⁰

For students, these factors are compounded by poverty, population decline in rural areas (leading to school closures), long distances to travel to schools, and a lack of safe WASH facilities, including menstrual hygiene facilities.

For children with disabilities, the situation is even more extreme, as many schools, including their WASH facilities, are not fully equipped to deal with their needs. However, despite these challenges, the enrolment of children with special educational needs and children with disabilities in regular schools has increased significantly in recent years.²⁶¹

School closures caused by the COVID-19 pandemic have compounded the challenges Moldova’s children already faced when it comes to accessing protective environment and quality education. Many children, especially those who are disadvantaged faced difficulties in learning from home and were at greater risk of depression, anxiety, violence including gender-based violence and abuse (*6.6 Child Protection*)²⁶² These issues are reflected in the increase in drop-out rates

²⁵⁶ Korpe PS, Petri WA Jr. Environmental enteropathy: critical implications of a poorly understood condition. Trends Mol Med. 2012 Jun;18(6):328-36. doi: 10.1016/j.molmed.2012.04.007. Epub 2012 May 25. PMID: 22633998; PMCID: PMC3372657

²⁵⁷ UNICEF (2022) Situation Analysis of children and adolescents in Moldova <https://www.unicef.org/moldova/media/8361/file/Situation%20Analysis%20of%20children%20and%20adolescents%20in%20the%20Republic%20of%20Moldova!.pdf>

²⁵⁸ EMIS (2021)

²⁵⁹ UNICEF (2020) Moldova Education Data <https://data.unicef.org/country/mda/>

²⁶⁰ OECD (2018) Programme for International Student Assessment: Moldova https://www.oecd.org/pisa/publications/PISA2018_CN_MDA.pdf

²⁶¹ UNICEF (2022) Situation Analysis of children and adolescents in Moldova <https://www.unicef.org/moldova/media/8361/file/Situation%20Analysis%20of%20children%20and%20adolescents%20in%20the%20Republic%20of%20Moldova!.pdf>

²⁶² Ibid.

between 2019 and 2020.²⁶³

"We want our education to be more fun and practical. We want to go outside the classroom - be in nature and take action to protect it."

**VICTORIA GRIGORCEA, 17
CHIȘINĂU**

6.5.2 CEE impacts on education

Extreme heat and cold, heavy rains and flooding make students' and teachers' travel to school highly challenging, particularly in rural areas where many may live far from schools.²⁶⁴²⁶⁵ Negative coping mechanisms such as child labour and early marriage have also been found to increase in the face of climate-related hazards, leading to reduced school attendance²⁶⁶

In the future, climate change and other environmental hazards may lead to the spread of increased infectious and vector-borne disease, also placing pressures on attendance.²⁶⁷

Extreme heat and cold may discourage the use of outdoor WASH facilities, which may

also be damaged during extreme weather events. All of these factors may discourage students from attending school, particularly the case for adolescent girls who require adequate and private WASH facilities for Menstrual Hygiene Management (MHM).²⁶⁸

Finally, poor drainage conditions at schools, particularly those located at lower elevations, may result in wet and damp conditions, which leads to damage to school infrastructure and furniture.²⁶⁹



Children at a primary school in Cahul ©UNICEF Moldova

Hot temperatures or extreme cold, particularly in the face of power cuts, also make learning difficult and uncomfortable for children and this may reduce both attendance and attainment.

6.5.3 Education to tackle CEE issues

Education is a critical tool in the fight against climate change and environmental

²⁶³World Bank (2020) Lower secondary completion rate, total (% of relevant age group) - Moldova
https://data.worldbank.org/indicator/SE_SEC_CMPT_LO_ZS?locations=MD

²⁶⁵PNAS (2019) Climate change and educational attainment
<https://www.pnas.org/doi/10.1073/pnas.1817480116>

²⁶⁶Save the Children (2017) The Neglected Link: Effects of climate and environment on child labour
<https://resourcecentre.savethechildren.net/document/neglected-link-effects-climate-change-and-environmental-degradation-child-labour-child/>

²⁶⁷UNICEF (2016) Thirsting for a Future
<https://www.unicef.org/reports/thirsting-future>

²⁶⁸UNICEF (2019) Guidance on Menstrual Hygiene Management
<https://www.unicef.org/media/91341/file/UNICEF-Guidance-menstrual-health-hygiene-2019.pdf>

²⁶⁹UNESCO (2015) Climate change education for sustainable development
<https://unesdoc.unesco.org/ark:/48223/pf0000246779/PDF/246779eng.pdf.multi>

degradation. It can lead to changes in environmental attitudes and behaviours and increased personal responsibility and informed day-to-day decision making, behaviours that are carried into adulthood and passed on to others.²⁷⁰

In Moldova, climate change and the environment is currently covered in *Ecological Studies*, an optional class for secondary school students. It is also mainstreamed throughout other subjects, such as Biology and Geography.

However, according to students, its inclusion is highly dependent on the interests and capacity of their teachers. Resources and training for teachers is reportedly lacking, particularly around the teaching of the science of climate change.

"We need support with lesson plans, practical activities and teaching materials, so we can really teach children about climate change."

**NATALIA MOCANU, TEACHER
CAHUL**

Finally, despite many young people expressing a desire to pursue green jobs, many still lack the knowledge, confidence or opportunity to do so.

Box.3 What are "green skills?"

Engineering and technical skills: hard skills for the design, construction and assessment of green technology, usually by engineers and technicians (e.g. solar engineers, green architects etc).

Science skills: the scientific knowledge, on climate and the environment, required to implement and manage WASH, energy and environment projects (e.g. water and energy specialists).

Operation management skills: knowledge of management, stakeholder engagement and customer service (e.g. solar sales associates, young entrepreneurs and project officers).

Monitoring skills: skills required to assess the observance of technical criteria and legal standards (e.g. environmental compliance inspectors, nuclear monitoring technicians and legal assistants).

In addition, a range of soft skills such as digital literacy, design thinking, creativity, adaptability and resilience are also critical.

This in part, is due to classes not providing them with adequate knowledge and the green skills they need to become effective climate leaders (Box.3). Students in many cases, also lack access to soft-skill development, including the critical thinking and digital skills required to develop green start-ups or pursue

²⁷⁰Wang (2022) Green returns to education: Does education affect pro-environmental attitudes and behaviours in China?

<https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0263383>

career in the environmental sector.

"I would love to work in the solar industry, but so many of us feel that the opportunities aren't there for us."

**MARILINA MIDRIGAN, 16
CHIȘINĂU**

This issue impacts both secondary and technical education institutions, particularly in rural areas.

6.6 Child protection

6.6.1 An overview

In 2021, UNICEF identified climate change as one of the top emerging issues impacting child protection globally.²⁷¹ **Climate change and environmental degradation add new economic hardship and other deprivations, further testing family structures and protection mechanisms for children.**

Table.8 Key child protection indicators for Moldova^{272,273}

Indicator	Value
Total number of identified at risk children	6572
Total number of children exposed to	1024

²⁷¹UNICEF (2021) <https://www.unicef.org/documents/child-protection-strategy>

²⁷²UNICEF (2022) Situation Analysis of children and adolescents in Moldova <https://www.unicef.org/moldova/media/8361/file/Situation%20Analysis%20of%20children%20and%20adolescents%20in%20the%20Republic%20of%20Moldova1.pdf>

²⁷³MLSP (2020), Serviciile de asistență pentru copiii victime/martori ai infracțiunilor în Republica Moldova, vor fi

violence (reported)	
Total number of neglected children	4721
% of children separated from or abandoned by parents	3
% of children living with disabilities	2
% of women married or in union before the age of 18	12
% of women experiencing violent partner abuse	30
% of women experiencing psychological abuse	71

In Moldova, child protection services are overstretched, particularly in the face of the Ukraine refugee crisis. These services are also often lacking the financial resources required to ensure a widespread and active workforce which reaches out to the most vulnerable children. Services are frequently more accessible in urban settings. Even where systems are in place, a lack of referral mechanisms, knowledge or understanding of what services are available, or how to access them, can result in children and their families not utilising them.²⁷⁴

extinse prin valorificarea experienței internaționale, news entry, available at:<https://msmps.gov.md/comunicare/comunicate/serviciile-de-asistenta-pentru-copiii-victime-martori-ai-infracțiunilor-in-republica-moldova-vor-fi-extinse-prin-valorificarea-experienței-internaționale/>

²⁷⁴UNICEF (2022) Situation Analysis of children and adolescents in Moldova <https://www.unicef.org/moldova/media/8361/file/Situation%20Analysis%20of%20children%20and%20adolescents%20in%20the%20Republic%20of%20Moldova1.pdf>



UNICEF distribution of WASH supplies to Roma families during the COVID-19 pandemic ©UNICEF Moldova

6.6.2 vulnerable children

Environmental degradation and climate change, and the poverty they can create, lead to an increase in the number of children living without parental care, leaving them more vulnerable to exploitation and abuse.

Around 6,572 children in Moldova are known to be at-risk of extreme poverty, abuse, neglect or exploitation. The number is growing, due to the worsening socio-economic context, exacerbated by the Russia-Ukraine conflict.

Increased poverty is forcing parents to work longer hours and many are leaving children behind, to move abroad to earn money. As a result, around 3% of all children were registered as being separated from their parents in 2020. Abandonment, and neglect

are other important reasons for this separation.²⁷⁵

Children living in extreme poverty, including those in institutions, children with disabilities and children with trauma are among the most vulnerable to the impacts of climate hazards and other forms of environmental degradation. These children often have the worst access to safe housing, adequate nutrition, WASH and healthcare services. Many also lack a supportive and caring home environment.

For migrant and refugee children, including those who are fleeing war in the Ukraine, many may experience increased poverty, fractured family structures and loss of other traditional community-protection mechanisms. These factors, in addition to the loss of caregivers (due to sickness and mortality), or an increased need to find work, place children at greater risk of violence including gender based violence, exploitation and abuse. 6.6.3 Violence against children

A core priority for UNICEF is to ensure that women and children are protected from any form of violence In Moldova, violence against women and girls is an ongoing concern, with 30% of women experiencing violent partner abuse and 71% of women experiencing psychological abuse.²⁷⁶ The trafficking of women and girls is also a serious concern, particularly for undocumented or stateless and Roma women and girls.²⁷⁷

Sexual, domestic and family violence is especially high when families have lost everything and are forced to live in

²⁷⁵ MLSP (2020), Serviciile de asistență pentru copiii victime/martori ai infracțiunilor în Republica Moldova, vor fi extinse prin valorificarea experienței internaționale, news entry, available at: <https://msmps.gov.md/comunicare/comunicate/serviciile-de-asistenta-pentru-copiii-victime-martori-ai-infracțiunilor-in-republica-moldova-vor-fi-extinse-prin-valorificarea-experienței-internaționale/>

²⁷⁶ EU and NIRAS (2021) Country gender profile republic of Moldova https://www.eeas.europa.eu/sites/default/files/country_gender_profile.pdf

²⁷⁷ UNICEF (2022) Situation Analysis of children and adolescents in Moldova <https://www.unicef.org/moldova/media/8361/file/Situation%20Analysis%20of%20children%20and%20adolescents%20in%20the%20Republic%20of%20Moldova1.pdf>

emergency accommodation. In the case of Moldova, this includes Ukrainian refugees and those who are impacted by extreme poverty.



©UNICEF Moldova

There is growing evidence that climate change and other forms of environmental degradation are exacerbating the violence risks that children and women face globally.²⁷⁸ Whilst the climate crisis does not appear to create new forms of violence per se, it does exacerbate pre-existing drivers, socioeconomic inequalities and harmful social norms.

The impacts of climate change place significant additional strains on households, and especially on the most vulnerable

²⁷⁸End Violence (2022) How the climate crisis is driving violence against children and what we can do about it <https://www.end-violence.org/articles/how-climate-crisis-driving-violence-against-children-and-what-we-can-do-about-it>

²⁷⁹Ibid.

²⁸⁰McLeod (2019) Does climate change increase the risk of child marriage? <https://academiccommons.columbia.edu/doi/10.7916/d8-aptf-pj62/download>

families. Stress factors can include loss of livelihood, home, possessions, and resources; rising food prices and scarcity; increasing difficulty obtaining water; social upheaval and migration. These conditions push families beyond their capacity to cope and significantly increase the threat of violence at home and in the community.

Globally, women and adolescent girls have reported high levels of sexual harassment and abuse in the aftermath of disasters, enabled by overcrowding in shelters, and lack of privacy, lighting and separate facilities for women and girls.²⁷⁹

The impacts of violence, both physical and emotional, can last a lifetime, impair children's resilience and long-term happiness.

6.6.3 Child marriage

Climate change and environmental degradation both lead to increased poverty, particularly among rural households. **Child marriage may be viewed as a coping strategy for dealing with a precarious economic situation and surrounding environment.** It may also be seen as a way of ensuring food and financial security for girls.²⁸⁰

In Moldova, child marriage has decreased in recent years, with around 12% of girls now being married before the age of 18.²⁸¹ The rate is particularly high among Roma girls and children living in the poorest rural households²⁸² Within the Roma community girls may be taken out of school and stay at home often around the age of 12 and young brides usually become isolated from their

²⁸¹UNICEF (2020) Moldova Child Protection Data <https://data.unicef.org/country/mda/>

²⁸²MICS (2012) Percentage of women (aged 20-24 years) married or in union before age 18 https://data.unicef.org/resources/data-explorer/unicef-f/?ag=UNICEF&df=GLOBAL_DATAFLOW&ver=1.0&dq=MDA.PT_F_20-24_MRD_U18.&startPeriod=1970&endPeriod=2022

families, leaving them at greater risk of violence.²⁸³

6.6.4 Child labour

As climate hazards intensify, the number of children from impoverished families, who are forced to work, is likely to increase.²⁸⁴ Children are defined as child labourers when they are either too young to work or are involved in hazardous activities that may compromise their physical, mental, social or educational development.

Extreme heat and cold, in addition to other issues may pose a threat to rural children, many of whom work on farms during the school holidays, making them prone to heat stroke and dehydration (*6.3.2.a. Extreme hot and cold temperatures*)²⁸⁵

6.6.4 Mental health

Climate change and environmental degradation have been linked to numerous mental health impacts on young people.²⁸⁶

This includes anxiety, depression and post-traumatic stress disorder, which have been linked to natural disasters, temperature and water stress and the degradation of local ecosystems.^{287,288}

²⁸³ UNICEF (2022) Situation Analysis of children and adolescents in Moldova
<https://www.unicef.org/moldova/media/8361/file/Situation%20Analysis%20of%20children%20and%20adolescents%20in%20the%20Republic%20of%20Moldova.pdf>

²⁸⁴ Myers (2017) The neglected link: Effect of climate change on child marriage
<https://resourcecentre.savethechildren.net/document/neglected-link-effects-climate-change-and-environmental-degradation-child-labour-child/>

²⁸⁵ Ibid.

²⁸⁶ North CS, Pfefferbaum B. Mental health response to community disasters: a systematic review. *JAMA*. 2013 Aug 7;310(5):507-18. doi: 10.1001/jama.2013.107799. PMID: 23925621

²⁸⁷ North CS. Current research and recent breakthroughs on the mental health effects of disasters. *Curr Psychiatry Rep*. 2014 Oct;16(10):481. doi: 10.1007/s11920-014-0481-9. PMID: 25138235

²⁸⁸ Ginexi EM, Weihs K, Simmens SJ, Hoyt DR. Natural disaster and depression: a prospective investigation of reactions to the 1993 midwest floods. *Am J Community Psychol*. 2000 Aug;28(4):495-518. doi: 10.1023/a:1005188515149. PMID: 10965388

Children, particularly those living in poverty and those without parental support, are highly vulnerable to mental health and psychosocial issues caused by environmental shocks and stresses.²⁸⁹

In Moldova, adolescents have been found to be more prone to anxiety, depression and insomnia, compared to the EU average.²⁹⁰

Additionally, rates of bullying and isolation of children are rising.²⁹¹ The emotional wellbeing of Moldova's children was further impacted by the COVID-19 pandemic, with lockdown and economic hardship placing extreme pressure on adults and children. It also prevented them from playing and socialising outdoors.

In Moldova, community-level mental health care services and counselling remain limited, particularly in rural areas. This is especially the case for children and youth from lower income families, many of whom may be impacted by Mental health and Psychosocial issues.²⁹²

Improving access to forests, parks and other green spaces has been found to be an important factor in protecting children's cognitive development and mental health.²⁹³

²⁸⁹ Hodgkinson S, Godoy L, Beers LS, Lewin A. Improving Mental Health Access for Low-Income Children and Families in the Primary Care Setting. *Pediatrics*. 2017 Jan;139(1):e20151175. doi: 10.1542/peds.2015-1175. Epub 2016 Dec 12. PMID: 27965378; PMCID: PMC5192088

²⁹⁰ Talha Khan Burki, 'Enormous Challenges for the Moldovan Health-Care System' (2020) 8 *The Lancet Respiratory Diseases* 138-139
<https://doi.org/10.1016/>

²⁹¹ UNICEF (2022) Situation Analysis of children and adolescents in Moldova
<https://www.unicef.org/moldova/media/8361/file/Situation%20Analysis%20of%20children%20and%20adolescents%20in%20the%20Republic%20of%20Moldova.pdf>

²⁹² de Vetten-Mc Mahon, M., Shields-Zeeman, L.S., Petrea, I. et al. Assessing the need for a mental health services reform in Moldova: a situation analysis. *Int J Ment Health Syst* 13, 45 (2019).
<https://doi.org/10.1186/s13033-019-0292-9>

²⁹³ Imperial College (2021) Living near woodlands is good for children and young people's mental health
<https://www.imperial.ac.uk/news/226853/living-near-woodlands-good-children-young/>

In adolescents, higher daily exposure to woodland was associated with higher scores for cognitive development, and a 16% lower risk of emotional and behavioural problems.²⁹⁴

Access to green spaces has also been found to promote socialisation, reduce obesity and improve children's overall happiness.

As such, increasing young peoples' access to safe green spaces across Moldova is a key opportunity to protect their environment whilst simultaneously improving children's happiness and wellbeing.

²⁹⁴ Ibid.

7. GOVERNMENT RESPONSES TO CLIMATE, ENERGY AND THE ENVIRONMENT

7.1. An overview

The right to a healthy environment has long been enshrined within Moldova's constitution, which stipulates four key principles:²⁹⁵

- Every individual has the right to live in an ecologically safe and healthy environment, to consume healthy food and to use harmless household appliances.
- The State shall guarantee to every individual the right to free access and dissemination of the trustworthy information regarding the state of the natural environment, living and working conditions and the quality of food and household appliances.
- Concealment or distortions of information regarding the elements that are harmless to human health are prohibited by the law.
- Private individuals and legal entities are liable for the damages caused to a person's health and property due to ecological infringements.

Three main institutions co-operate in the sphere of environmental compliance assurance in Moldova:

- **The Ministry of Environment:** develops and monitors environmental policy
- **The Environmental Agency:** works on policy implementation, permitting and monitoring of environment quality
- **The Inspectorate for Environmental Protection:** monitors compliance with environmental legislation.

The Ministry of Environment also houses the Climate Change Office, and is responsible for developing and promoting state policies for environmental protection, natural resource management and conservation in Moldova. Their responsibilities include implementing the United Nations Framework Convention on Climate Change (UNFCCC) provisions as well as enforcing other environment treaties.²⁹⁶ A list of other key environmental partners can be found in Annex.2.

In recent years, the Republic of Moldova has begun to scale-up efforts to address the consequences of climate change and the environmental degradation affecting the country. However, many challenges remain in terms of climate and environmental policy implementation and monitoring, particularly at the local level. These include insufficient awareness of climate change, the lack of specific technical capacities, inadequate financing, challenges in institutional leadership and poor oversight and co-ordination which inhibits the effective mainstreaming of CEE issues across all sectors.

This is particularly the case when it comes to child inclusion and participation in these policies. Few policies have a clear focus on the needs of children and youth (Table.9).

²⁹⁵ Republic of Moldova (1994) Constitution of the Republic of Moldova https://www.constcourt.md/public/files/file/Actele%20Curtii/acte_en/MDA_Constitution_EN.pdf

²⁹⁶ USAID (2017) Moldova Climate Risk Profile <https://www.climatelinks.org/resources/climate-risk-profile-moldova>

Moldova has some of the core institutional and legislative structures for disaster risk management (DRM) in place, but—as is common in many countries—the main emphasis remains on “reactive” disaster response, rather than a “proactive” disaster risk reduction response.²⁹⁷ At the same time, the capacity of the institutions to prevent and respond to crises, at national and local levels remain weak. There is also a need for improved data collection and management, around climate hazards and other environmental impacts.

Finally, and perhaps most critically, environmental protection priorities continue to be underfunded, limiting the Government’s ability to respond to the myriad of environmental issues currently being faced by the country²⁹⁸

7.2 National policy

7.2.1 Climate change

In 2016, Moldova was a signatory to the Paris Climate Change Agreement which aims to cap global temperature rise at 1.5 degrees Celsius in this century.²⁹⁹

Moldova’s climate change policy centres around its Nationally Determined Contribution (NDC) to the United Nations Framework on Climate Change (UNFCCC), as outlined in the Paris Climate Agreement.

Moldova’s first Nationally Determined Contribution was published in 2014, and updated in 2020.³⁰⁰ The revision of the NDC

was supported by the European Union (EU) through the EU4Climate initiative.³⁰¹

Box.4 What is a Nationally Determined Contribution (NDC)?

A Nationally Determined Contribution is a climate action plan to cut emissions and adapt to climate impacts.

More specifically, they commit to supporting global efforts to ensure temperatures do not rise more than 1.5 °C above pre-industrial levels and that the most vulnerable communities are protected from the impacts of drought, flooding and other climate hazards.

Each Party to the Paris Agreement is required to establish an NDC and update it every five years.

Key highlights from the NDC include:

- A commitment to an unconditional emissions reduction target of 70% by 2030 compared to 1990 levels.
- A focus on agriculture, water, health, forestry, energy and transportation for adaptation and resilience.

²⁹⁷ World Bank (2020) Strengthening Moldova’s Disaster Risk Management and Climate Resilience: Facing Current Issues and Future Challenges <https://documents1.worldbank.org/curated/en/767811616046683526/pdf/Strengthening-Moldova-s-Disaster-Risk-Management-and-Climate-Resilience-Facing-Current-Issues-and-Future-Challenges.pdf>

²⁹⁸ Ministry of the Environment (2022) Group 5. Economic opportunities and policy responses, Indicator 5.2 Public expenditures on environmental protection <https://mediu.gov.md/indicatori/capitol5en.html>

²⁹⁹ UNFCCC (2022) Paris Agreement - Status of Ratification <https://unfccc.int/process/the-paris-agreement/status-of-ratification>

³⁰⁰ Republic of Moldova (2020) Updated Nationally Determined Contribution https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Republic%20of%20Moldova%20First/MD_Updated_NDC_final_version_EN.pdf

³⁰¹ EU4Climate (2022) <https://eu4climate.eu/>

The country has produced four National Communications, which outline the country's greenhouse gas inventories and adaptation priorities, and an National Adaptation Plan, which outlines the country's proposed adaptation actions.³⁰² The latter is currently being updated and expected to be released in early 2023.

Finally, two national strategies have been developed, with the goal of achieving the objectives set out in Moldova's NDC:

- [The 2030 Low-Emission Development Strategy and implementation Plan of Action](#): actions to reduce emissions, based on the recently updated NDC.³⁰³
- [Climate Change Adaptation Strategy and implementation Plan of Action](#): priority adaptation actions, for the most vulnerable sectors, based on the NAP.

Climate change is also streamlined into other policies (Table.x), including the main strategic planning document of the country – the National Development Strategy “Moldova 2030.”³⁰⁴

7.2.2 Energy

Moldova's energy policy focuses primarily on improving integration in regional markets, strengthening energy security, improving compliance with EU directives, increasing electricity generation capacity and promoting energy efficiency and renewable energy (see [5. Energy Production and Access](#)).

In 2013, Moldova introduced its updated National Energy Strategy (NES), 2030, setting energy sector objectives for 2020 with an outlook towards 2030.³⁰⁵ The Strategy aims to bolster energy security and improve the sustainability and diversity of energy sources, including the integration of renewables.

A National Renewable Energy Action Plan (NREAP) for the 2013-2020 period, envisages a set of legal, technical and analytical measures to ensure achievement of the targets.³⁰⁶

7.2.3 Other environmental policies

In addition to the above, the Republic of Moldova has also developed other strategies and plans, aimed at protecting the environment from pollution and other forms of degradation (Table.x).

The country's Environmental Strategy (2014-2023) was developed in line with EU environmental legislation, with the aim of establishing sectoral strategies for water, air, biodiversity conservation, climate change adaptation and mitigation, in addition to promoting a more sustainable, green and innovative economy.³⁰⁷

7.3 Are policies, plans and strategies child inclusive?

Just two of Moldova's key CEE policies, plans and strategies (the NDC and National Communication to UNFCCC), explicitly include children and youth (Table.9).

³⁰² Republic of Moldova (2018) Fourth National Communication, Republic of Moldova <https://unfccc.int/documents/64790>

³⁰³ MoE (2011), Low-Emission Development Strategy until 2020, Ministry of Environment of Moldova, Chisinau, <http://www.clima.md/download.php?file=cHVibGJlL3B1YmxpY2F0aW9uYy8yNTI3MjM2X21kX21vbGRvdmFfbG93X2VtLnBkZg%3D%3D>

³⁰⁴ Republic of Moldova National Development Strategy (2018) <https://me.gov.md/en/content/national-development-strategy-moldova-2030>

³⁰⁵ Republic of Moldova (2013) National Energy Strategy https://www.serviciilocale.md/public/files/Energy_Strategy_2030_Final.pdf

³⁰⁶ Ministry of Economy (2022) Energy <https://me.gov.md/en/content/energy>

³⁰⁷ Republic of Moldova (2014) Environmental Strategy 2014-2023 <http://EnvironmentalStrategyfortheyears2014-2023-2014MoldovaEnvironmentalStrategy2014-20282cb2.pdf>

Children and young people still face various barriers when it comes to exercising their right to participation in Moldova, with the right to participation being even more restricted for adolescent girls as well as vulnerable children, such as children with disabilities, Roma children, and children from low-income families.³⁰⁸ When interviewed, youth advocates felt that children's priorities, concerns, and suggestions were often ignored or diminished. While the platforms to support child and adolescent participation and their involvement in decision making are being developed, concerns still remain in relation to translating the inputs presented through these platforms into action, into decisions and into policies.

Child Human Rights Defenders, including those working on environmental protection issues, rarely seek any support or protection as they feel existing mechanisms are not in place to protect their privacy, especially but not exclusively, in remote areas. Many may also experience a risk of harassment and retaliation for their advocacy efforts.³⁰⁹


A key concern among young people remains the lack of local climate and environment data. In addition, many cited concerns in accessing knowledge and resources, as most were only available internationally in English.

The limited provision of technology and accessible information and communication formats (e.g., sign language interpretation, Braille, easy-to-read) in the country prevents the access of deaf children and children with intellectual disabilities to quality, inclusive education, as well as to information.

³⁰⁸ UNICEF (2022) Situation Analysis of children and adolescents in Moldova
<https://www.unicef.org/moldova/media/8361/file/Situation%20Analysis%20of%20children%20and%20adolescents%20in%20the%20Republic%20of%20Moldova1.pdf>

³⁰⁹ Frontline Defenders (2020) Global Analysis 2020
https://www.frontlinedefenders.org/sites/default/files/flid_global_analysis_2020.pdf


Table. 9 Are CEE policies, plans and strategies child inclusive?

Grouping	Name	Responsible party	Date	Purpose	Child climate and environment focus?	Observations
	Updated Nationally Determined Contribution (NDC) ³¹⁰	Ministry of the Environment	2022	Outlines planned efforts to reduce national emissions and adapt to the impacts of climate change	✓	<ul style="list-style-type: none"> Updated NDC was based on extensive stakeholder consultations, including with youths Commits to supporting global efforts to ensure temperatures do not rise more than 1.5 °C above pre-industrial levels and adapt to the adverse impacts of climate change. Acknowledges climate change impacts on children, including undernutrition, water-borne disease and the economic toll taken on vulnerable families. Adaptation priorities include increasing youth climate training and education opportunities, and creating green job opportunities for young people - particularly rural youth.
	Fourth National Communication ³¹¹	Ministry of the Environment	2018	To provide a progress update and supplement information provided in the previous National Communications to UNFCCC.	✓	<ul style="list-style-type: none"> Mentions the impact climate change is having on children's vulnerability to waterborne disease and Acute Respiratory Infections (ARIs) and extreme cold on children. Highlights the negative impacts of air pollution on children's health. Mentions increasing children's awareness of the environment and climate change issues, through strengthening curricula and making environmental science more fun and practical.
	Low Emission Development Strategy ³¹²	Ministry of the Environment	2011	Outlines a strategy for development while reducing greenhouse gas emissions over the medium to long term.	X	<ul style="list-style-type: none"> The Low Emissions Development Strategy was recently revised based on the NDC2 and publicly consulted. Takes stock of trends in GHG emissions, including by sector. No mention of children and youth.

³¹⁰ Government of the Republic of Moldova (2022) Updated NDC https://unfccc.int/sites/default/files/NDC/2022-06/MD_Updated_NDC_final_version_EN.pdf

³¹¹ Republic of Moldova () National Communication (NC). NC 4. <https://unfccc.int/documents/64790>


³¹² Ministry of the Environment (2011), Low-Emission Development Strategy until 2020, Ministry of Environment of Moldova, Chisinau, <http://www.clima.md/download.php?file=CHVibGjl3B1Ymxy2F0aW9ucy8yNTI3MjM2X21kX21vbGRvdmFfbG93X2VtLnBkZg%3D%3D>

	National Drought Plan ³¹³	Ministry of Agriculture, Rural Development and the Environment	2019	Aims to improve preparedness to drought and strengthen resilience, outlining key responsibilities and actions at all levels.	X	<ul style="list-style-type: none"> • Provides an overview of current and future drought risk, including issues around land degradation. • Brief mention of youth in relation to agricultural employment, but does not include them as active agents of change, nor does it outline actions to specifically support their needs in relation to drought.
	National Energy Strategy 2030 ³¹⁴	Ministry of Energy	2013	The Strategy aims to bolster energy security and improve the sustainability and diversity of energy sources, including the integration of renewables.	X	<ul style="list-style-type: none"> • Sets energy sector objectives for 2020 with an outlook to 2030. • The Strategy has three main objectives: Ensuring the security of energy supply; Developing competitive markets and ensuring regional and European energy integration. • No mention of children or youth
	Programme on Energy Efficiency for 2011-2020	Ministry of Energy	2011	Aims to improve energy efficiency across all sectors.	X	<ul style="list-style-type: none"> • Aims to ensure a 16% in energy savings by 2016, 20% by 2020 against a 2009 • No mention of children or youth.
	National Renewable Energy Action Plan (NREAP) ³¹⁵	Ministry of Energy	2013	Sets out a plan for increasing renewable energy generation across Moldova, including specific sectoral targets.	X	<ul style="list-style-type: none"> • Aims to have a minimum 17% share of renewables in total energy mix by 2020. Sectoral targets are: <ul style="list-style-type: none"> • 10% of RES in electricity • 10% of RES in transport • 27% of RES in heat and cooling. • No mention of children and youth.

³¹³ Republic of Moldova (2019) National Drought Plan https://www.unccd.int/sites/default/files/country_profile_documents/Drought%20Plan%20ENG%2020%20June%202C%202019.pdf

³¹⁴ Republic of Moldova (2013) National Energy Strategy https://www.serviciulocale.md/public/files/Energy_Strategy_2030_Final.pdf

³¹⁵ Ministry of Energy (2013) National Renewable Energy Action Plan https://www.energy-community.org/dam/jcr:4b3ef508-7809-4a67-92f2-c2fb5b31d356/NREAP_2014_MD.pdf

	<p>The Environmental Strategy for 2014-2023³¹⁶</p>	<p>Ministry of Agriculture, Rural Development and the Environment</p>	<p>2014</p>	<p>Ensures the consistency of the long-term strategic planning with the EU rules and the development and approval of climate change adaptation strategies.</p>	<p>X</p>	<ul style="list-style-type: none"> • Adopted by the Moldovan Government via decision No. 301 of 24.04.2014. • The second of the strategy's key objectives includes the integration of "environmental protection, sustainable development, and green economy principles, of climate change adaptation principles into all sectors of the national economy". • The strategy includes an emissions reduction target of 20% by 2020 and sets out a number of actions with regard to the institutional management of environmental matters and knowledge dissemination activities. • No mention of children or youth.
	<p>Moldova 2030: National Development Strategy³¹⁷</p>	<p>Republic of Moldova</p>	<p>2018</p>	<p>Main reference document for all sectoral strategies and subsequent policy interventions.</p>	<p>X</p>	<ul style="list-style-type: none"> • Declares the principles of the green economy, which will ensure economic resilience and adaptation to climate change and, in the long term, will avoid the huge economic costs. • Children placed at the centre of the development process, strong focus on equity and inclusion, but not in relation to climate change and environmental degradation.
	<p>National Health Policy³¹⁸</p>	<p>Ministry of Health</p>	<p>2007</p>	<p>Defines Moldova's vision, policy directions and strategies for ensuring improved access to quality healthcare for all Moldovans.</p>	<p>X</p>	<ul style="list-style-type: none"> • Clearly articulates the goal of ensuring equal and adequate access to health services for all citizens • Strong inclusion of children, but not in relation to climate change. • No mention of climate-related health interventions.
	<p>Water Supply and Sanitation Strategy 2014 – 2028</p>	<p>Ministry of Agriculture, Regional Development</p>	<p>2014</p>	<p>Aims to present an updated and detailed route for water supply and sanitation sector development, both in the medium term (until 2018), and in the long term (until 2028), as well as contribute to</p>	<p>X</p>	<ul style="list-style-type: none"> • Aims to increase access to WASH services to improve living standards and environmental security. • Also aims to increase environmental protection and environmental management, including greener and more efficient water and energy management.

³¹⁶ Republic of Moldova (2014) Environmental Strategy 2014-2023 <http://EnvironmentalStrategyfortheyears2014-2023-2014MoldovaEnvironmentalStrategy2014-20282cb2.pdf>

³¹⁷ Republic of Moldova National Development Strategy (2018) <https://me.gov.md/en/content/national-development-strategy-moldova-2030>

³¹⁸ Republic of Moldova (2007) National Health Policy 2007-2021 https://www.ilo.org/dyn/natlex/natlex4.detail?p_lang=en&p_isn=111900&p_country=MDA&p_count=352&p_classification=01.08&p_classcount=4

		and Environment		insuring the human right to safe drinking water.		<ul style="list-style-type: none"> ● Mentions climate change adaptation. ● No significant mention of children and youth.
	Waste Management Strategy 2013-2027 ³¹⁹	Republic of Moldova	2013	Aims to implement improved waste collection, separation and disposal of household and industrial waste, to minimise environmental impacts.	X	<ul style="list-style-type: none"> ● Aims to develop infrastructure and services necessary to properly protect the environment and human health, develop legal and institutional framework required to support the gradual correspondence of domestic waste management practices to the European Union ones through international, national and local partnerships attracting investments needed for sustainable development of the sector according to the priority needs and in a pace accessible to the society. ● No mention of children and youth.
	National Strategy on Agriculture and Rural Development for the period 2014-2020 ³²⁰	Ministry of Agriculture, Rural Development and the Environment	2014	Defines the Government's strategy to develop the agricultural sector and rural, ensuring the sustainable management of natural resources in agriculture.	X	<ul style="list-style-type: none"> ● States that the sustainable management of agricultural resources should be achieved by increasing the use of renewable energy resources in the sector, and by reducing the vulnerability of crop productions to climate change.
	Strategy for Child Protection (2014-2020) ³²¹	Ministry of Labour and Social Protection	2014	Aims to prevent and resolve child protection issues for children and their families.	X	<ul style="list-style-type: none"> ● The 125 actions of the Plan are structured in 3 compartments, which are focused on the general objectives of the Strategy, namely: <ul style="list-style-type: none"> ● Ensuring the necessary conditions for raising and educating children in the family environment;

³¹⁹ Republic of Moldova (2013) Waste Management Strategy 2013-2027 https://serviciilocale.md/public/files/deseuri/2013_01_24_NATIONAL_WASTE_MANAGEMENT_STRATEGY_2013-27_ENG.pdf

³²⁰ Ministry of Agriculture, Rural Development and the Environment (2014) National Strategy on Agriculture and Rural Development for the period 2014-2020 <https://www.climate-laws.org/geographies/moldova/policies/national-strategy-on-agriculture-and-rural-development-for-the-period-2014-2020>

³²¹ Ministry of Labour and Social Protection (2014) Strategy for Child Protection (2014-2020) <http://lex.justice.md/md/353459/>

						<ul style="list-style-type: none">● Preventing and combating violence, neglect and exploitation of children, promotion of non-violent practices in children's upbringing and education;● Reconciling the family and professional life to ensure the child's harmonious growth and development.● No mention of climate change and measures to protect children.● Aims to promote and support the capacity of SMEs to adopt green practices and processes
--	--	--	--	--	--	--



Finally, these climate-related threats will almost certainly increase in the future, placing more of Moldova’s children at risk.

9. CONCLUSION

The 2022 CLAC has found that drought, water pollution, air pollution and other forms of environmental degradation, are among the greatest threats facing Moldova’s children, both now and in the future.

All regions of Moldova face a significant level of climate hazard risk, however, the southern regions, due to their simultaneous exposure to drought, flooding and high levels of land degradation, face the highest risks (Map.1). Cahul and Ștefan Vodă, face some of the highest drought and land degradation risks, whilst Moldova’s central regions, including Hîncești and Orhei, face some of the worst flood risks.

Within these hazard-prone areas, it is the poorest children who are most vulnerable (Map.2). These children have the least access to safely constructed homes, electricity, safe water and sanitation, and nutritious foods, all of which are critical in ensuring protection and resilience in the face of climate-related hazards. Children from minority groups, including the Roma and children with disabilities, face some of the worst vulnerabilities.

When both climate hazard risk (Map.1) and child vulnerability (Map.2) are combined, we find that children living in **xxxx out of Moldova’s 34 districts face a high or extremely high risk of climate change (Map.3).** As such, it is these districts that should be prioritised for both poverty reduction and climate resilience activities.

Protecting the environment is one of the best ways of ensuring resilience - and protecting children, both now and in the future.

With the right political will and investment, much of Moldova’s environmental degradation can be reversed; young people are an important part of the solution. Around 80% of young people polled through a 2022 U-Report Poll stated that they care deeply about the state of the environment and want the Government to do more, particularly in regards to clean energy, recycling and water pollution issues.³²²

The current energy crisis in addition to Moldova’s proposed accession into the European Union, provide unique opportunities to tackle issues that include increasing energy security and a limit to the “push-factors” leading to youth emigration, by creating better, more meaningful career prospects for Moldova’s youth.

³²²U-Report (2022) Youth Climate Change Poll, November 2022
<https://moldova.ureport.in/opinion/3195/>

10. RECOMMENDATIONS

10.1 Overall recommendations

- **Ensure an improved provision of climate resilient infrastructure and services for children, particularly in the most vulnerable regions.** This involves making schools, hospitals, WASH systems and other infrastructure and services more resilient to extreme heat, drought, flooding and storms prioritising the communities who need the most support.
- **Reduce greenhouse gas emissions to improve air quality and protect children's health.** At the national level, this includes advocating for improved energy security through the introduction of domestic renewable energy sources (including wind and solar). It means ensuring that the poorest families have access to consistent energy supply, especially during the winter months, reducing the country's unsustainable reliance on firewood.
- **Improve the collection of climate and environment-related data for children,** at the district levels. This includes working with partners to establish and maintain climate-monitoring stations, routine reporting and the effectiveness of resilience programmes, post-disaster, particularly in regards to their impacts on children.
- **Ensure that young people are included in all national, regional and international climate negotiations and decisions.** Children and youth must be placed front and centre stage of all climate-related decision-making. This includes the establishment of a National Youth Advisory Board for the Ministry of Environment.

- **Support efforts to apply for major climate financing, to fund transformational action for energy, WASH and climate.** This will involve teaming up with the Ministry of Environment and international agencies, and branching out beyond the traditional donor base. Specific funding opportunities include the Green Climate Fund (GCF) and the Global Environment Facility (GEF).

10.2 Sector specific recommendations

a. WASH

- **Ensure that children, particularly in the most vulnerable rural regions (Fig.3), have access to better, safer water supply and toilets.** This means moving away from the use of outdoor pit latrines, in both homes and schools, and ensuring that toilets are safely constructed, so as to avoid water and soil contamination. It also means treating and filtering water, to eliminate toxins and pathogens, which are dangerous to children's health. Establishing minimum standards for WASH in Schools, will help guidance improved siting, construction, maintenance and monitoring of facilities.
- **Work in the private sector to establish full-chain sanitation services for rural populations,** from construction, to pit emptying, treatment and disposal. Monitoring and regulation, particularly in relation to safe disposal, must also be strengthened.
- **Support efforts to expand improved solid waste management, particularly in regards to recycling.** This includes raising awareness and knowledge on plastic pollution and the importance of recycling. It also includes advocating for improved

sorting and waste management systems in rural areas, in addition to the full enforcement of the single use plastic ban.

- **Advocate for routine water testing efforts (at least every six months) for schools, hospitals and communities.** Immediate remedial action must be taken to fix water safety issues

b. Maternal and Child Health

- **Work with health sector partners to strengthen the resilience of health services across the country.** This includes improving the siting and construction of facilities, including WASH and waste disposal facilities, to prevent contamination. It also includes scaling-up the use of solar power systems, to ensure the continuity of health services during extreme weather events.
- **Mainstream health considerations with regard to climate change across all policy, strategy and plans, and vice versa,** ensuring that all health sector strategies and plans include a child-focussed climatic component
- **Advocate for improved routine health data collection for children, specifically in relation to the issues identified in the CLAC.** This will help the Government, UNICEF and other partners to better respond to issues as they arise
- **Work with partners to strengthen Early Warning Systems** to identify, monitor, prepare and respond to climate-induced health threats, before they arise.
- **Improve the capacity to support public health in emergencies,** through the provision of training for administrators, health staff and medical students, to improve their understanding of

environmental hazards and their impacts on children's health.

- **Promote information campaigns and raise public awareness** of impacts of climate change and extreme weather events on human health, including young children.

c. Food security and nutrition

- **Advocate for the inclusion of children, climate and nutrition in all relevant policies** (i.e. include climate in nutrition policy and vice versa)
- **Advocate for an improved policy, legislation, and fiscal environment to support improved staple food sufficiency and sustainable food production in Moldova.** This also includes improved regulation of marketing of unhealthy foods and drinks (especially in and near schools to school children) and breastmilk substitutes.
- **Work with the Government and partners to create a sustainable and resilient food system to improve access, demand and utilisation of nutritious foods for children.** More specifically by ensuring:
 - Social and behaviour change strategies, as well as food-based dietary guidelines, should promote the increased consumption of coarse grains, pulses, fruits, vegetables, nuts and seeds; whilst limiting the consumption of animal-sourced and processed foods.
 - Lowering the prices of healthy, nutritious foods and increasing those of unhealthy foods high in sugar, fat, and/or salt, for example, through taxes, incentives/disincentives, or other fiscal and regulatory measures.

- **Ensure that the children in the most vulnerable communities are prioritised through the use of improved social protection mechanisms (Map.3).** This includes:
 - The scale-up of supplemental feeding programmes, free school meals, universal child grants and direct cash transfers in the most hazard prone areas.
 - Expand the pre-registration of households in disaster-prone areas and the use of mobile technologies, to allow more rapid support.
 - Ensure that social protection mechanisms are shock-responsive and closely linked to Early Warning System data.
- Work with Government partners to improve the **collection of climate and nutrition data for children**, at the provincial and community levels. This includes establishing climate-monitoring stations (e.g. soil moisture gauges) in the most hazard-prone agricultural production areas. Routine child nutrition data should also be included in the country's **Early Warning Systems**.
- Work with families to **improve adoption of optimal infant and young child feeding and care practices** through:
 - The promotion and support of early and exclusive breastfeeding.
 - The use of diverse, locally available nutritious foods in preparing complementary foods for young children

d. Education

- **Revise the National Curricula to ensure that environmental science is taught in a more interesting and meaningful manner.** This includes:
 - Mainstreaming climate and environmental education across all subjects at all levels, introducing new modules on water safety and conservation, energy efficiency and organic food production.
 - Ensuring lessons are made more practical and fun, by teaching classes outside and providing children with the opportunity to identify and tackle key environmental issues in their own communities.
 - Training new and existing teachers on better, more modern teaching practices, for both environmental science and all other subjects.
 - Developing guidance materials for teachers, including lesson plans and practical teaching materials, including capacity building on how to use them. This includes reigniting the Green Box initiative including water testing kits for schools, tools to establish organic gardens and materials for school advocacy campaigns.
- **Establish programmes to provide Green Skills training and mentorship for young people (Box.x section x).** Specific opportunities for this may include:
 - Ensuring existing youth training programmes, such as Upshift, include a stronger environmental component.

- Integrating youth into existing business development projects, (e.g. *Greening the Small and Medium Enterprises*, see Table.x).
- Working with the private sector to establish an annual youth Climate Hackathon, with seed money and paid internship opportunities being provided to the winners.
- Promoting the inclusion of improved green skills training in professional schools and excellence centres as well (including tailored practical recommendations for each of existing qualification with the focus on environment protection, energy efficiency, use of renewable energy sources, specific techniques for collecting, transporting and storing waste etc
- Work with the private sector, government and civil society to establish a paid Environmental Internship and Mentorship Programme for youth.
- **Strengthen energy security, school energy access and efficiency efforts,** including through
 - Introducing energy audits for schools to identify where most heat is being lost and identify priority actions to be taken.
 - Piloting the use of solar for both electricity and water heating, increasing the availability of warm water for handwashing.
 - Increasing thermal insulation in schools (including through the use of recycled insulation materials) and the use of LED lighting, to reduce energy consumption.

e. Child protection

- **Ensure that child protection policy and plans address the role that climate shocks and other environmental stresses play in key child protections issues.** This includes enacting policy and programmes to mitigate the impact of climate hazards on the disruption of child protection services, and its impact on violence against children including exploitation, abuse, and on gender based violence as well as mental health.
- **Strengthening the availability and presence of social workers, in the most hazard-prone areas,** to help safeguard children, women and their families/caregivers in the face of increasing environmental shocks and stresses and related economic hardships.

f. Social protection

- Protect children and their parents/caregivers from the impacts of climate change and environmental degradation, by supporting expanded child sensitive **social protection measures** for families living in the most hazard prone areas. This includes cash transfer schemes and school-feeding programmes.
- **Ensure social protection systems are shock responsive,** allowing them to respond more quickly to crises. This includes the establishment of an emergency contingency fund for all social protection programmes, to fund humanitarian cash transfers in case of emergencies.
- Specify procedures for **evaluating the economic impacts of an emergency and provide assistance** that covers a greater

share of the expenditures needed to recover from a shock.

- Expand coverage of formal social assistance that protects most vulnerable families, especially with children and persons with disability. Specific increased coverage can best be suggested following specific impact and needs analysis.

g. Humanitarian preparedness

- Ensure that existing Early Warning Systems are made more child-sensitive; for example by including up-to-date child health and nutrition monitoring data and that relevant information is transmitted to all partners in a timely manner.
- Advocate for the use of remote sensing and improved use of soil moisture gauges to better pre-empt risk climate-related disasters and plan accordingly, including the prepositioning of supplies where needed.
- Strengthen the shock resilience of existing humanitarian services to prepare for climate-related emergencies through training and guidance, particularly in those areas most vulnerable to climate-related hazards.

h. Communication and advocacy

- **Expand the number of youth climate advocates across the country,** including through Gen-U and U-Report, providing them with training and communications equipment as needed. This includes identifying youth climate leaders at the district level and providing them with opportunities to engage with the Government and media.
- **Work with youth influencers to launch a major digital media**

campaign, documenting the first-hand impact of environmental degradation on Moldova's children and advocating for change. Potential topics of focus include, for example, the use of clean energy to promote energy independence or water safety. The campaign should include a Call to Action signed by Moldova's youth and should aim to engage influencers and the media, to create impact at scale.

11. REFERENCES

- Adair, L. S., et al (2013) Associations of linear growth and relative weight gain during early life with adult health and human
- Ahmed M, Rauf M, Mukhtar Z, Saeed NA. Excessive use of nitrogenous fertilisers: an unawareness causing serious threats to environment and human health. *Environ Sci Pollut Res Int*. 2017 Dec;24(35):26983-26987. doi: 10.1007/s11356-017-0589-7. Epub 2017 Nov 14. PMID: 29139074.
- Akter (2019) Impact of drinking water salinity on children's education
<https://www.sciencedirect.com/science/article/abs/pii/S0048969719330311?via%3Dihub>
- Alam, Md. (2020). Impacts of heavy metal feed contaminants in cattle farming
https://www.researchgate.net/publication/341787485_Impacts_of_heavy_metal_feed_contaminants_in_cattle_farming
- AMAT (2021) Air pollution risks <https://www.iamat.org/risks/air-pollution> Last accessed 7 April 2022
- G.C.A. Amos, L. Zhang, P.M. Hawkey, W.H. Gaze, E.M. Wellington (2014) Functional metagenomic analysis reveals rivers are a reservoir for diverse antibiotic resistance genes, *Veterinary Microbiology*, Volume 171, Issues 3–4, 2014, Pages 441-447, ISSN 0378-1135 <https://doi.org/10.1016/j.vetmic.2014.02.017>
- An R, Ji M, Zhang S. Global warming and obesity: a systematic review. *Obes Rev*. 2018;19(2):150-163
- Andoni A. & Ciobanu E., (2018), Assessing the eating habits of the resident population in the Republic of Moldova, Sate University of medicine and Pharmaceuticals, Nicolae Testemitanu, 2018
- AP (2022) Europe's energy crisis raises firewood prices, theft fears
<https://apnews.com/article/technology-business-germany-weather-923a058f06c8a679f982824b5a337108>
- Au WW. Susceptibility of children to environmental toxic substances. *Int J Hyg Environ Health*. 2002 Oct;205(6):501-3. doi: 10.1078/1438-4639-00179. PMID: 12455272.
- Azage M, Kumie A, Worku A, C Bagtzoglou A, Anagnostou E. Effect of climatic variability on childhood diarrhoea and its high risk periods in northwestern parts of Ethiopia. *PLoS One*. 2017 Oct 26;12(10):e0186933. doi: 10.1371/journal.pone.0186933. PMID: 29073259; PMCID: PMC5658103
- Balkan Insight (2020) Gas Pipeline Linking Moldova to Romania Nears Completion, 29 April 2020
<https://balkaninsight.com/2020/04/29/gas-pipeline-linking-moldova-to-romania-nears-completion/>
- Belfast Telegraph (2022) Prices rocket and forests felled as people turn to firewood to heat homes 27 October 2022
<https://www.belfasttelegraph.co.uk/news/world-news/prices-rocket-and-forests-felled-as-people-turn-to-firewood-to-heat-homes-42099343.html>
- Bennett CM, Friel S. Impacts of Climate Change on Inequities in Child Health. *Children (Basel)*. 2014 Dec 3;1(3):461-73. doi: 10.3390/children1030461. PMID: 27417491; PMCID: PMC4928733
- Bloomberg (2022) Just '17 People and a Dog' Stand Between Ukraine's Neighbor and Energy Meltdown
<https://www.bloomberg.com/news/features/2022-11-25/as-russia-cuts-gas-a-tiny-team-races-to-save-moldova-from-energy-disaster>
- Britton E, Hales S, Venugopal K, Baker MG. The impact of climate variability and change on cryptosporidiosis and giardiasis rates in New Zealand. *J Water Health*. 2010 Sep;8(3):561-71. doi: 10.2166/wh.2010.049. Epub 2010 Mar 9. PMID: 20375485
- Climate Change Post (2022) Forestry and Peatlands Moldova
<https://www.climatechangepost.com/moldova/forestry-and-peatlands/>
- Daniel et al (2018) Increased risk of tick-borne encephalitis in warmer temperatures
<https://www.frontiersin.org/articles/10.3389/fcimb.2018.00090/full>
- de Vetten-Mc Mahon, M., Shields-Zeeman, L.S., Petrea, I. et al. Assessing the need for a mental health services reform in Moldova: a situation analysis. *Int J Ment Health Syst* 13, 45 (2019). <https://doi.org/10.1186/s13033-019-0292-9>

Diamanti KS, Alygizakis NA, Nika MC, et al. Assessment of the chemical pollution status of the Dniester River Basin by wide-scope target and suspect screening using mass spectrometric techniques. *Analytical and Bioanalytical Chemistry*. 2020 Aug;412(20):4893-4907. DOI: 10.1007/s00216-020-02648-y. PMID: 32347361

Duchenne-Moutien RA, Neetoo H. Climate Change and Emerging Food Safety Issues: A Review. *J Food Prot*. 2021 Nov 1;84(11):1884-1897. doi: 10.4315/JFP-21-141. PMID: 34185849

Ecohub (2022) Pollution of the Dniester River with faeces in Soroca, Moldova <https://www.ecohubmap.com/hot-spot/pollution-of-the-dniester-river-with-faeces-in-soroca-moldova/3tznfml8mr3jyc>

EEA (2016) Vector-borne diseases <https://www.eea.europa.eu/data-and-maps/indicators/vector-borne-diseases-2/assessment>

EEA (2021) Air pollution: how its affects our health <https://www.eea.europa.eu/themes/air/health-impacts-of-air-pollution>

End Violence (2022) How the climate crisis is driving violence against children and what we can do about it

Enerdata (2022) Moldova Energy Information
<https://www.enerdata.net/estore/energy-market/moldova/>

EPA (2009) U.S. EPA, Toxicity and Exposure Assessments for Children’s Health
https://archive.epa.gov/region5/teach/web/pdf/benz_summary.pdf

EPA (2022) Sources of greenhouse gas emissions <https://www.epa.gov/ghgemissions/sources-greenhouse-gas-emissions>

EPA (2022) Basic Information about Carbon Monoxide (CO) Outdoor Air Pollution
<https://www.epa.gov/co-pollution/basic-information-about-carbon-monoxide-co-outdoor-air-pollution>

EPA (2022) Particulate Matter (PM) Basics <https://www.epa.gov/pm-pollution/particulate-matter-pm-basics>

EU 4 Environment (2021) Towards Green Transformation: the Republic of Moldova
<https://euneighbourseast.eu/wp-content/uploads/2022/02/report-green-growth-indicators-republic-moldova-2021-eng.pdf>

European Environment Agency (2014) EEA Signals 2014 – Well-being and the environment. Waste: a problem or a resource? <https://www.eea.europa.eu/publications/signals-2014/articles/waste-a-problem-or-a-resource>

EU and NIRAS (2021) Country gender profile republic of Moldova
https://www.eeas.europa.eu/sites/default/files/country_gender_profile.pdf

Frank, Enrico & Ramsbottom, David & Avanzi, Agostino. (2016). Flood Risk Assessment and Prioritisation Measures: Two key tools in the development of a national programme of flood risk management measures in Moldova 10.2495/SAFE-V6-N3-475-484/003. <https://bit.ly/3OFNvHZ>

Frontline Defenders (2020) Global Analysis 2020
https://www.frontlinedefenders.org/sites/default/files/fld_global_analysis_2020.pdf

S.C. Gad (2014) Encyclopedia of Toxicology <https://www.sciencedirect.com/referencework/9780123864550/encyclopedia-of-toxicology>

Gilmartin AA, Petri WA Jr. Exploring the role of environmental enteropathy in malnutrition, infant development and oral vaccine response. *Philos Trans R Soc Lond B Biol Sci*. 2015 Jun 19;370(1671):20140143. doi: 10.1098/rstb.2014.0143. PMID: 25964455; PMCID: PMC4527388

Ginexi EM, Weihs K, Simmens SJ, Hoyt DR. Natural disaster and depression: a prospective investigation of reactions to the 1993 midwest floods. *Am J Community Psychol*. 2000 Aug;28(4):495-518. doi: 10.1023/a:1005188515149. PMID: 10965388

Global Forest Watch (2022) Moldova <https://bit.ly/3VDMuCh>

Global Wind Atlas (2022) Moldova <https://globalwindatlas.info/en/area/Moldova>

Government of the Republic of Moldova (2018) National Land Degradation Neutrality Targets
https://www.unccd.int/sites/default/files/ldn_targets/Moldova%20LDN%20TSP%20Country%20Report.pdf

Government of the Republic of Moldova (2018) Fourth National Communication to the UNFCCC
<https://unfccc.int/documents/64790>

- Government of the Republic of Moldova (2021) Absolute and relative poverty data (by region) http://statbank.statistica.md/PxWeb/pxweb/en/30%20Statistica%20sociala/30%20Statistica%20sociala_04%20NIV_NIV_070/?rxid=b2ff27d7-0b96-43c9-934b-42e1a2a9a774
- Government of the Republic of Moldova (2022) Updated National Determined Contribution https://unfccc.int/sites/default/files/NDC/2022-06/MD_Updated_NDC_final_version_EN.pdf
- Herbarth O, Fritz G, Krumbiegel P, Diez U, Franck U, Richter M. Effect of sulfur dioxide and particulate pollutants on bronchitis in children--a risk analysis. *Environ Toxicol*. 2001 Jun;16(3):269-76. doi: 10.1002/tox.1033. PMID: 11409199
- IARC (2013) Outdoor air pollution is a lead cause of cancer <https://www.iarc.who.int/news-events/iarc-outdoor-air-pollution-a-leading-environmental-cause-of-cancer-deaths/>
- Imperial College (2021) Living near woodlands is good for children and young people's mental health <https://www.imperial.ac.uk/news/226853/living-near-woodlands-good-children-young/>
- IRENA (2019) Moldova Renewables Readiness Assessment https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2019/Feb/IRENA_RRA_Moldova_2019_EN.pdf
- La Merrill M, Birnbaum LS. Childhood obesity and environmental chemicals. *Mt Sinai J Med*. 2011 Jan-Feb;78(1):22-48. doi: 10.1002/msj.20229. PMID: 21259261; PMCID: PMC3076189.
- Hodgkinson S, Godoy L, Beers LS, Lewin A. Improving Mental Health Access for Low-Income Children and Families in the Primary Care Setting. *Pediatrics*. 2017 Jan;139(1):e20151175. doi: 10.1542/peds.2015-1175. Epub 2016 Dec 12. PMID: 27965378; PMCID: PMC5192088
- IEA (2022) Moldova Energy Profile <https://www.iea.org/reports/moldova-energy-profile>
- Imperial College (2021) Living near woodlands is good for children and young people's mental health <https://www.imperial.ac.uk/news/226853/living-near-woodlands-good-children-young/>
- IPCC (2018) AR15 Summary for Policy Makers <https://www.ipcc.ch/sr15/chapter/spm/>
- IPCC (2022) Climate Change 2022: Impacts, Adaptation and Vulnerability <https://www.ipcc.ch/report/sixth-assessment-report-working-group-ii/>
- Johnson (2019) The implications of bullying and trauma on impoverished populations <https://files.eric.ed.gov/fulltext/EJ1236628.pdf>
- Keen et al (2003.) Effect of exogenous glucocorticoids and dietary change on winter and summer STEC 0157 faecal shedding www.ars.usda.gov/research/publications/publication/?seqNo115=153427
- Korpe PS, Petri WA Jr. Environmental enteropathy: critical implications of a poorly understood condition. *Trends Mol Med*. 2012 Jun;18(6):328-36. doi: 10.1016/j.molmed.2012.04.007. Epub 2012 May 25. PMID: 22633998; PMCID: PMC3372657
- Kuharuk, Ecaterina & Crivova, Olga. (2014). The State of Soil Erosion in the Republic of Moldova and the Need for Monitoring. 10.1007/978-94-007-6187-2_3 https://www.researchgate.net/publication/299945781_The_State_of_Soil_Erosion_in_the_Republic_of_Moldova_and_the_Need_for_Monitoring/citation/download
- Mabel Andalón, João Pedro Azevedo, Carlos Rodríguez-Castelán, Viviane Sanfelice, Daniel Valderrama-González, Weather Shocks and Health at Birth in Colombia, *World Development*, Volume 82, 2016, Pages 69-82, ISSN 0305-750X, <https://doi.org/10.1016/j.worlddev.2016.01.015>
- McLeod (2019) Does climate change increase the risk of child marriage? <https://academiccommons.columbia.edu/doi/10.7916/d8-aptf-pj62/download>
- Meeker JD. Exposure to environmental endocrine disruptors and child development. *Arch Pediatr Adolesc Med*. 2012 Jun 1;166(6):E1-7. doi: 10.1001/archpediatrics.2012.241. PMID: 22664748; PMCID: PMC3572204
- Michaels, B et al (2022) Water temperature as a factor in handwashing efficacy, *Food Service Technology* Volume2, Issue3 September 2002, Pages 139-149 <https://onli>
- MICS (2012) Percentage of women (aged 20-24 years) married or in union before age 18 https://data.unicef.org/resources/data_explorer/unicef_f/?ag=UNICEF&df=GLOBAL_DATAFLOW&ver=1.0&dq=MDA.PT_F_20-24_MRD_U18.&startPeriod=1970&endPeriod=2022
- Mihnea Cristian, Popa & Diaconu, Daniel. (2019). Effects of Deforestation on Flooding in the Moldova River Basin. *Aerul și Apa: Componente ale Mediului*. 2019. 129-136. 10.24193/AWC2019_13.

Ministry of Agriculture, Rural Development and the Environment (2014) National Strategy on Agriculture and Rural Development for the period 2014-2020 <https://www.climate-laws.org/geographies/moldova/policies/national-strategy-on-agriculture-and-rural-development-for-the-period-2014-2020>

Ministry of Economy (2022) Energy <https://me.gov.md/en/content/energy>

Ministry of Energy (2013) National Renewable Energy Action Plan https://www.energy-community.org/dam/jcr:4b3ef508-7809-4a67-92f2-c2fb5b31d356/NREAP_2014_MD.pdf

Ministry of Environment and Territorial Development (2000) First National Communication of the Republic of Moldova under the UNFCCC <http://unfccc.int/resource/docs/natc/moldnc2.pdf>

Ministry of the Environment (2011), Low-Emission Development Strategy until 2020, Ministry of Environment of Moldova, Chisinau, <http://www.clima.md/download.php?file=cHVibGJlL3B1YmxpY2F0aW9ucy8yNTI3MjM2X21kX21vbGRvdmFfbG93X2VtLnBkZg%3D%3D>

Ministry of the Environment (2022) Group 5. Economic opportunities and policy responses, Indicator 5.2 Public expenditures on environmental protection <https://mediu.gov.md/indicatori/capitol5en.html>

Ministry of Labour and Social Protection (2014) Strategy for Child Protection (2014-2020) <http://lex.justice.md/md/353459/>

Republic of Moldova (2014) Environmental Strategy 2014-2023 <http://EnvironmentalStrategyfortheyears2014-2023-2014MoldovaEnvironmentalStrategy2014-20282cb2.pdf>

MLSP (2020), Serviciile de asistență pentru copiii victime/martori ai infracțiunilor în Republica Moldova, vor fi extinse prin valorificarea experienței internaționale, news entry, available at: <https://msmps.gov.md/comunicare/comunicate/serviciile-de-asistent-a-pentru-copiii-victime-martori-ai-infracțiunilor-in-republica-moldova-vor-fi-extinse-prin-valorificarea-experienței-internaționale/>

MoARDE (2019) National Drought Plan of the Republic of Moldova https://www.researchgate.net/publication/336014816_National_Drought_Plan_of_the_Republic_of_Moldova

Molina O, Saldarriaga V. The perils of climate change: In utero exposure to temperature variability and birth outcomes in the Andean region. *Econ Hum Biol.* 2017 Feb;24:111-124. doi: 10.1016/j.ehb.2016.11.009. Epub 2016 Nov 28. PMID: 27984771

Moldova.org (2019) Being eco-friendly in Moldova: the facets of the plastic pollution problem and its long-term solutions <https://www.moldova.org/en/possible-eco-friendly-moldova-facets-plastic-pollution-problem-possible-solutions/>

Morgan, E, F et al (2018) Sustainable hydropower in the 21st century <https://doi.org/10.1073/pnas.180942611>

NBS (2020) The children of Moldova, UNICEF 2020, available at: <https://www.unicef.org/moldova/rapoarte/Copiii-moldovei-0>

NBS (2021d) Analiza sărăciei monetare și a bunăstării gospodăriilor cu copii în baza rezultatelor Cercetării Bugetelor Gospodăriilor Casnice din 2020 Raport analitic Chișinău, 2021.

NOAA (2022) What is eutrophication? <https://oceanservice.noaa.gov/facts/eutrophication.html>

North CS, Pfefferbaum B. Mental health response to community disasters: a systematic review. *JAMA.* 2013 Aug 7;310(5):507-18. doi: 10.1001/jama.2013.107799. PMID: 23925621

OECD (2018) Programme for International Student Assessment: Moldova https://www.oecd.org/pisa/publications/PISA2018_CN_MDA.pdf

OECD (2021) Developing a Water Policy Outlook for Georgia, the Republic of Moldova and Ukraine <https://doi.org/10.1787/512a52aa-en>

Pennsylvania State University (2021) Burning Wood? Caring for the Earth? <https://ecosystems.psu.edu/research/centers/private-forests/news/burning-wood-caring-for-the-earth>

Philipsborn R, Ahmed SM, Brosi BJ, Levy K. Climatic Drivers of Diarrheagenic Escherichia coli Incidence: A Systematic Review and Meta-analysis. *J Infect Dis.* 2016 Jul 1;214(1):6-15. doi: 10.1093/infdis/jiw081. Epub 2016 Feb 29. PMID: 26931446; PMCID: PMC4907410

Planet Plus (2022) Flash flood in Moldova

<https://www.youtube.com/watch?v=DlrBTuWqVRI>

PNAS (2019) Climate change and educational attainment <https://www.pnas.org/doi/10.1073/pnas.1817480116>

Politico (2022) Europe's security is at stake in Moldova

https://www.politico.eu/article/europe-security-ukraine-russia-war-at-stake-in-moldova/?fbclid=IwAR3uxBUlZz7XFyxaI4KvDnAWLCEUuY7Zb3uzkmEdRmUp4qwM_k0vPA5391g

Popescu, Francisc & Trumić, Milan & Cioabla, Adrian & Vujic, Bogdana & Stoica, Virgil & Trumic, Maja & Opris, Carmen & Bogdanovic, Grozdanka & Trif-Tordai, Gavrila. (2022). Analysis of Surface Water Quality and Sediments Content on Danube Basin in Djerdap-Iron Gate Protected Areas. *Water*. 14. 2991. 10.3390/w14192991.

https://www.researchgate.net/publication/364035181_Analysis_of_Surface_Water_Quality_and_Sediments_Content_on_Danube_Basin_in_Djerdap-Iron_Gate_Protected_Areas

Power Technology (2022) Moldova faces winter darkness as Russia weaponises energy

<https://www.power-technology.com/features/moldova-gas-russia-transnistria/>

PV Magazine (2022) Moldova launches 230MW renewables auction

<https://www.pv-magazine.com/2022/04/05/moldova-launches-230mw-renewables-auction/>

Qasam et al (2021) Removal of heavy metal ions from wastewater: a comprehensive and critical review

<https://www.nature.com/articles/s41545-021-00127-0>

Republic of Moldova (1994) Constitution of the Republic of Moldova <https://cis-legislation.com/cis/moldova/legislation.html>

Republic of Moldova (2007) National Health Policy 2007-2021

https://www.ilo.org/dyn/natlex/natlex4.detail?p_lang=en&p_isn=111900&p_country=MDA&p_count=352&p_classification=01.08&p_classcount=4

Republic of Moldova (2013) National Energy Strategy

https://www.serviciilocale.md/public/files/Energy_Strategy_2030_Final.pdf

Republic of Moldova (2013) Waste Management Strategy 2013-2027

https://serviciilocale.md/public/files/deseuri/2013_01_24_NATIONAL_WASTE_MANAGEMENT_STRATEGY_2013-27_ENG.pdf

Republic of Moldova (2018) Fourth National Communication, Republic of Moldova <https://unfccc.int/documents/64790>

Republic of Moldova National Development Strategy (2018) <https://me.gov.md/en/content/national-development-strategy-moldova-2030>

Republic of Moldova (2022) National Energy Strategy 2030

https://www.spcr.cz/files/Moldova_EnStrategy_draft_12_full_310512.pdf

Reuters (2022) Most Moldovan power supplies restored after Russian strikes on Ukraine

<https://www.reuters.com/world/europe/half-moldova-without-power-after-russian-strikes-ukraine-deputy-pm-2022-11-23/>

Rocklov and Dubrow (2020) Climate change: an enduring challenge for vector-borne disease

<https://www.nature.com/articles/s41590-020-0648-y>

Sanobar Iqbal, Mujahid Farid, Muhammad Zubair, Zaki Ul Zaman Asam, Shafaqat Ali, Muhammad Abubakar, Sheharyar Farid, Muhammad Rizwan, Efficacy of Various Amendments for the Phytomanagement of Heavy Metal Contaminated Sites and Sustainable Agriculture. *A Review, Managing Plant Production Under Changing Environment*, 10.1007/978-981-16-5059-8, (239-272), (2022).

Save the Children (2017) The Neglected Link: Effects of climate and environment on child labour

<https://resourcecentre.savethechildren.net/document/neglected-link-effects-climate-change-and-environmental-degradation-child-labour-child/>

Shaker, Richard & Sirodoev, Igor. (2011). Landslide Susceptibility in the Republic of Moldova: A Landscape and Multivariate Approach for Regional Assessment. *Papers of the Applied Geography Conference*. 34. 288-298

Shashar et al (2020) Temperature and preeclampsia

<https://journals.plos.org/plosone/article?id=10.1371/journal.pone.023287>

SIDA (2018) Multidimensional Poverty Assessment Moldova <https://cdn.sida.se/app/uploads/2022/04/15085758/2020-MDPA-Moldova.pdf>

Smargiassi A, Kosatsky T, Hicks J, Plante C, Armstrong B, Villeneuve PJ, Goudreau S. Risk of asthmatic episodes in children exposed to sulphur dioxide stack emissions from a refinery point source in Montreal, Canada.

Summer, Wolfgang & Diernhofer, Wolfgang. (2003). Soil erosion in the Republic of Moldova - The importance of institutional arrangements https://www.researchgate.net/publication/267850876_Soil_erosion_in_the_Republic_of_Moldova_-_The_importance_of_institutional_arrangements

Talha Khan Burki, 'Enormous Challenges for the Moldovan Health-Care System' (2020) 8 The Lancet Respiratory Diseases- es 138-139 <https://doi.org/10.1016/>

Think Hazard (2022) Moldova Wildfire <https://thinkhazard.org/en/report/165-moldova/WF>

Think Hazard (2022) River and Urban Flooding <https://thinkhazard.org/en/report/165-moldova>

UK Department of Energy and Climate (2021) F-gases GHG Inventory summary Factsheet https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/140082/5555-fgases-factsheet.pdf

UNDP (2021) View from space on the air we breathe in Moldova <https://www.undp.org/moldova/news/view-space-air-we-breathe-moldova>

UNDP (2022) Report on Energy Poverty Assessment and Support Mechanisms in the Republic of Moldova <https://www.undp.org/moldova/publications/report-energy-poverty-assessment-and-support-mechanisms-republic-moldova>

UNEP (2021) From Pollution to Solution <https://www.unep.org/resources/pollution-solution-global-assessment-marine-litter-and-plastic-pollution>

UNESCO (2015) Climate change education for sustainable development <https://unesdoc.unesco.org/ark:/48223/pf0000246779/PDF/246779eng.pdf.multi>

UNFCCC (2008) Moldova Soil Conservation Project http://www.clima.md/public/files/2_Cadrul_National/PDD_Moldova_Soil_Conservation_Project.pdf

UNFCCC (2022) Paris Agreement - Status of Ratification <https://unfccc.int/process/the-paris-agreement/status-of-ratification>

UNHCR (2021) A universal right to health [https://www.europarl.europa.eu/RegData/etudes/ATAG/2021/698846/EPRS_ATA\(2021\)698846_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/ATAG/2021/698846/EPRS_ATA(2021)698846_EN.pdf)

UNICEF (2016) Pollution: 300 million children breathing toxic air - UNICEF report <https://www.unicef.org/press-releases/pollution-300-million-children-breathing-toxic-air-unicef-report>

UNICEF (2016) The impact of air pollution on children <https://www.unicef.org/media/60106/file>

UNICEF (2016) Thirsting for a Future https://reliefweb.int/sites/reliefweb.int/files/resources/UNICEF_Thirsting_for_a_Future_REPORT.pdf

UNICEF (2019) Clean the air for children https://www.unicef.org/sites/default/files/2019-02/Clean_the_Air_for_Children_Executive_summary_ENG.pdf

UNICEF (2019) Guidance on Menstrual Hygiene Management <https://www.unicef.org/media/91341/file/UNICEF-Guidance-menstrual-health-hygiene-2019.pdf>

UNICEF (2020) The toxic truth Children's exposure to lead pollution undermines a generation of future potential <https://www.unicef.org/reports/toxic-truth-childrens-exposure-to-lead-pollution-2020>

UNICEF (2020) Moldova child data <https://data.unicef.org/country/mda/>

UNICEF (2022) Situation Analysis of children and adolescents in Moldova <https://www.unicef.org/moldova/media/8361/file/Situation%20Analysis%20of%20children%20and%20adolescents%20in%20the%20Republic%20of%20Moldova!.pdf>

United Nations (2021) Secretary General calls latest IPCC Report a "Code Red for humanity" <https://www.un.org/press/en/2021/sgsm20847.doc.htm>

United Nations (2022) What is renewable energy? <https://www.un.org/en/climatechange/what-is-renewable-energy>

University of Yale (2022) EPI: Moldova <https://epi.yale.edu/epi-results/2022/country/mda>

UN IGME (2020) Under-5 Mortality Rate <https://data.unicef.org/country/mda/>

UNTC (1989) Convention on the Rights of the Child
https://treaties.un.org/Pages/ViewDetails.aspx?src=TREATY&mtdsg_no=IV-11&chapter=4#EndDec

U-Report (2022) Youth Climate Change Poll, November 2022 <https://moldova.ureport.in/opinion/3195/>

USAID (2017) Climate Risk Profile Moldova <https://www.climatelinks.org/resources/climate-risk-profile-moldova>

UTM (2022) Moldova wind energy potential map <https://moldova.awstruepower.com>

van Elsas JD, Semenov AV, Costa R, Trevors JT. Survival of Escherichia coli in the environment: fundamental and public health aspects. ISME J. 2011 Feb;5(2):173-83. doi: 10.1038/ismej.2010.80. Epub 2010 Jun 24. Erratum in: ISME J. 2011 Feb;5(2):367. PMID: 20574458; PMCID: PMC3105702

Wang (2022) Green returns to education: Does education affect pro-environmental attitudes and behaviours in China? <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0263383>

WHO (2020) Assessment: Republic of Moldova <https://apps.who.int/iris/rest/bitstreams/1463903/retrieve>

WHO-UNICEF JMP (2022) Progress on household drinking water, sanitation and hygiene https://washdata.org/sites/default/files/2022-01/jmp-2021-wash-households_3.pdf

World Bank (2013) Reducing the vulnerability of Moldova's Agricultural Systems to Climate Change <https://openknowledge.worldbank.org/handle/10986/16199>

World Bank (2018) Photovoltaic energy potential in Moldova <https://solargis.com/maps-and-gis-data/download/moldova>

World Bank (2020) Strengthening Moldova's Disaster Risk Management and Climate Resilience: Facing Current Issues and Future Challenges <https://documents1.worldbank.org/curated/en/767811616046683526/pdf/Strengthening-Moldova-s-Disaster-Risk-Management-and-Climate-Resilience-Facing-Current-Issues-and-Future-Challenges.pdf>

World Bank (2020) Lower secondary completion rate, total (% of relevant age group) - Moldova <https://data.worldbank.org/indicator/SE.SEC.CMPT.LO.ZS?locations=MD>

World Bank (2020) Special Focus Note: Moldova's Vulnerability to Natural Disasters and Climate Risks <https://thedocs.worldbank.org/en/doc/7bf12b95f10a3daf7b570718b2100e15-0080012021/related/MEU-DRM-Special-Topic-May-2021-FINAL-eng-Copy.pdf>

World Bank (2022) Climatology: Moldova, Climate Change Portal <https://climateknowledgeportal.worldbank.org/country/moldova/climate-data-historical>




Xu Z, Etzel RA, Su H, Huang C, Guo Y, Tong S. Impact of ambient temperature on children's health: a systematic review. Environ Res. 2012 Aug;117:120-31. doi: 10.1016/j.envres.2012.07.002. Epub 2012 Jul 23. PMID: 22831555





Yasmine A. Farhat, Soo-Hyung Kim, Angelia L. Seyfferth, Long Zhang, Rebecca B. Neumann, Altered arsenic availability, uptake, and allocation in rice under elevated temperature, Science of The Total Environment, 10.1016/j.scitotenv.2020.143049, 763, (143049), (2021)


Youth Progress Index (2022) Republic of Moldova <https://youthprogressindex.org/#>

12. ANNEXES

Annex.1 Key CEE issues and their implications for children

UNICEF Programme Components	CEE issues and implications
<p>Maternal, neonatal and child health</p> 	<p>Climate change and other environmental hazards are leading to an increase in disease, for women and children especially. This will place an increased burden on Moldova’s healthcare systems.</p> <ul style="list-style-type: none"> • Air pollution leads to increased asthma, childhood cancer, stunted growth and impaired cognitive development. • Extreme heat increases the risks of heatstroke in children and pre-eclampsia in pregnant women. • Both heavy rains and water scarcity increase the spread of infectious disease by damaging WASH facilities and reducing water for safe hygiene practices. • Vector-borne diseases will increase as temperatures increase. • Microplastics and other toxins cause inflammation and disease in children. • The loss of green space and nature has major implications for children's mental health and wellbeing.
<p>Nutrition</p> 	<p>Climate change and other environmental hazards are leading to a reduction in food security, reducing food availability and the diversity and safety of foods consumed by children.</p> <ul style="list-style-type: none"> • Flooding and water scarcity reduces the amount of food available for children, exacerbating undernutrition and the consumption of unhealthy foods. • Flooding, water scarcity, deforestation and water pollution all impact rural livelihoods, increasing poverty and food scarcity, increasing food prices. This in turn leads to malnutrition and a reduction in dietary diversity for children. • A lack of safe, climate resilient WASH facilities increases the risk of diseases such as Acute Respiratory Infection and diarrhoea, all of which exacerbate malnutrition. • Microplastics and other environmental toxins reduce the safety of food consumed by children causing cancer, impaired cognitive development and other issues.
<p>WASH</p> 	<p>The climate crisis is undermining progress in achieving universal WASH access in Moldova. It is causing a reduction in safe water availability and the destruction of sanitation facilities, leading to environmental contamination and health impacts.</p> <ul style="list-style-type: none"> • Increasing temperatures reduce water supply, particularly during the dry season. This leads to reduced hygiene practices including handwashing and menstrual hygiene management. • Heavy rainfall, flooding and landslides lead to the destruction of sanitation facilities, contaminating the environment and spreading water-borne disease. • Those without safe, climate-resilient WASH services are the most vulnerable to these impacts. Lack of safe WASH access is undermining dignity and survival.

<p>Education</p> 	<p>Climate change and other environmental hazards are impacting schools and children’s access to education.</p> <ul style="list-style-type: none"> ● Climate change, particularly heavy rains, is likely to damage education infrastructure, including WASH facilities, education materials and buildings, or worse still, causing child injury and/or death. ● Extreme heat and heavier rains makes the trip to school difficult, particularly for those living in rural areas. It creates a hot, damp school environment, making concentration and attainment difficult for children and teachers.
<p>Child protection</p> 	<p>Climate change and environmental degradation leads to economic hardship, testing family structures and child protection mechanisms, putting children at greater risk of violence and exploitation.</p> <ul style="list-style-type: none"> ● Climate change and other environmental hazards lead to a loss of homes and possessions, increasing poverty and child vulnerability to abuse and neglect. ● Climate change induced natural disasters such as flooding, landslides and wildfires also lead to the disruption of social safety nets, and the family and community structures vital in protecting children. This increases the risk of child exploitation and abuse. ● Child labour and early marriage increase, as they become some of the only available coping strategies for parents and children. ● Climate hazards and loss of green space place children’s mental health and wellbeing at risk, leaving them at greater risk of alcohol and drug abuse, suicide and sexual exploitation.
<p>Social protection</p> 	<p>Climate change and environmental degradation threaten to worsen child poverty. Social protection mechanisms for the poorest, most vulnerable children and their families must be scaled up and be made more “shock-responsive.”</p> <ul style="list-style-type: none"> ● Poverty is not evenly distributed (Fig.3) and neither are the hazards that children are exposed to (Fig.2) and social protection mechanisms must be adjusted accordingly. ● Around 25% of Moldova’s children are considered to live in absolute poverty with the majority of these children living in homes that are vulnerable to environmental hazards. The COVID 19 pandemic, the Ukraine-Russia conflict and the resulting economic crises have have pushed many more families into poverty.
<p>Emergencies</p> 	<p>Climate change, wildfires and other disasters are leading to an increase in the number of emergencies affecting children, leading to a loss of life and destruction of their homes and communities.</p> <ul style="list-style-type: none"> ● Increased climate hazards and environmental degradation may lead to increased displacement, injury and death of children. ● Reaction rather than preparation is common, when it comes to Moldova’s emergency response. ● Response structures are also being placed under additional strain from the Russia-Ukraine conflict and the impending economic crisis.

<p>Communication and advocacy</p> 	<p>Children are the ones most affected by the impacts of climate change and environmental degradation, despite being the least responsible. They must be placed front and centre in all policies and advocacy efforts to ensure their voices are elevated and their futures protected.</p> <ul style="list-style-type: none"> • Just two of the climate policies and plans analysed included the needs of children and youth. • Similarly, very few sector-specific policies include climate and children. • The voices of children and youth must be amplified in all climate policy and advocacy efforts. Leaders must listen to these voices and actively include them in climate and environment-related policy and programming.
---	---

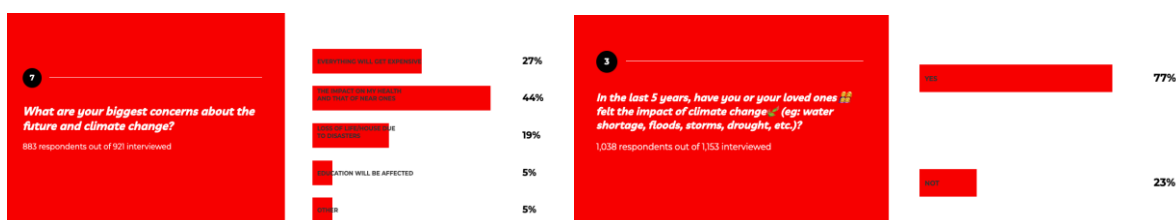
Annex 2: Partners working in climate, energy and the environment

Partner name	Description of activities
Government agencies	
The Ministry of Environment	Responsible for developing and monitoring environmental policy. The Climate Change Office is responsible for developing and promoting state policies for environmental protection, natural resource management and conservation. Their responsibilities include implementing United Nations Framework Convention on Climate Change (UNFCCC) provisions as well as enforcing other environment treaties.
The Environmental Agency	Works on policy implementation, permitting and monitoring of environment quality.
The Inspectorate for Environmental Protection	Monitors compliance with environmental legislation.
The National Commission on Climate Change	Established by Resolution number 444 of 01 July 2020, the Commission is responsible for monitoring NDC implementation in the Republic of Moldova. The Commission is composed of the Deputy Prime Minister, ministers from major Ministries, Moldovan local government representatives, and representatives of NGOs and the private, totaling 17 members and is chaired by the Minister of Agriculture, Regional Development and Environment.
Ministry of Infrastructure and Regional Development	In charge of developing and implementing strategies and policies related to energy and the environment and developing and implementing strategies and policies related to transport, road infrastructure, and the energy sector, including the promotion of alternative energy sources
Ministry of Economy	Oversees the developing and implementation of policies for a sustainable, inclusive, and digitised economy.

National Agency for Social Assistance	Provides support for the correct and uniform implementation of social assistance legislation and policies, covering all basic and thematic legislation
Ministry of Health	Regulates the development and implementation of policies and strategies on guaranteeing access to quality medical services in all regions of the country
National Bureau of Statistics	Collects, processes, and disseminates objective and credible official statistics that are required for policy and decision-making, research, forecasting.
Regional and local public authorities	Create and enforce local laws, manage services and activities which are adapted to the needs of the communities they serve.
National Council for the Protection of the Rights of the Child	Consultative body of the government that monitors and coordinates the implementation of national policies in the field of child rights protection
Parliamentary Commission for Social Protection, Health and Family	Monitors the implementation of the strategies and the application of the relevant legislation
Parliamentary Commission on Environment and Regional Development	Monitors the implementation of state policies in the field of renewable energy sources in order to prevent environmental impacts while promoting the sustainable use of natural resources;
Child rights ombudsman	Oversees all aspects of children's rights, including the right to a healthy environment
International agencies	
UNEP	Provides leadership and encourages partnership in caring for the environment by inspiring, informing, and enabling nations and peoples to improve their quality of life without compromising that of future generations.
UNDP	Aims to end poverty, build democratic governance, rule of law, and inclusive institutions.
World Bank	Promotes long-term economic development and poverty reduction by providing technical and financial support to help countries implement reforms or projects, such as building schools, providing water and electricity, fighting disease, and protecting the environment
EU	Promotes peace and supports Moldova's ascension to the EU, including improving all aspects of safe, healthy environment.

GIZ	Aims to deliver effective solutions that offer people better prospects and sustainably improve their living conditions.
USAID	Aims to extend assistance to countries recovering from disaster, trying to escape poverty, and engaging in democratic reforms.
REC	Assists in addressing environmental issues by encouraging the collaboration between governments, non-governmental organizations, businesses, and other environmental stakeholders
Civil society	
EcoVisio	Provides environmental education and small grants for climate-related initiatives to the youth from across the country. Also provides greening services to businesses and non-profits.
Fridays for Future	Youth-led movement to put moral pressure on policymakers, to ensure they listen to the scientists, and then to take forceful action to limit global warming. The movement is independent of commercial interests and political parties and knows no borders.
Solidarites	Provides humanitarian aid and through its relief efforts demonstrate solidarity when populations are faced with political, ethnic or economic oppression, war or any other threatening circumstances.
Ecocontact	Monitors environmental legislation implementation in the Republic of Moldova, consults key parties in the implementation of EU legislation, and ensures human environmental rights are respected
National Environment Center	Implements projects aimed at increasing the environmental culture of target groups: central and local public authorities, competent bodies, economic agents, media, educational institutions, and the general public. Also provides the necessary assistance to local public authorities in order to attract investments for the creation/improvement of environmental infrastructure

Annex 3: U-Report Poll Results³²³

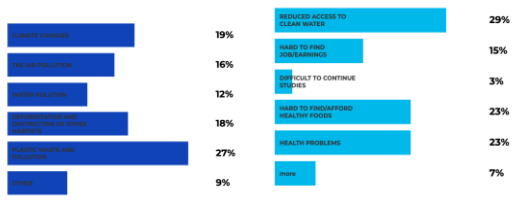


³²³ U-Report (2022) Youth Climate Change Poll, November 2022 <https://moldova.ureport.in/opinion/3195/>

1

In your opinion, what are the biggest threats to the environment 🌍 facing Moldova?

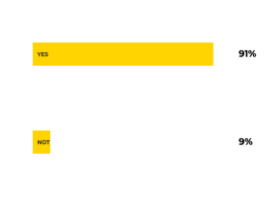
1,180 respondents out of 34,693 respondents



2

If YES, what were the biggest consequences for you or your loved ones?

742 respondents out of 804 interviewed



3

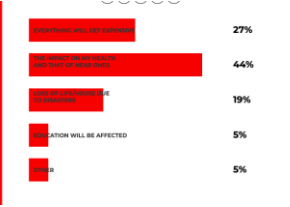
When you think about the environment and climate change 🌍, do you become more worried about the future?

920 respondents out of 963 interviewed

4

What are your biggest concerns about the future and climate change?

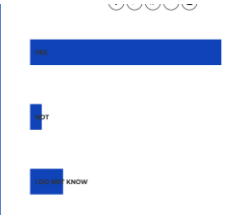
883 respondents out of 921 interviewed



5

Do you think that Central Public Authorities 🏛️ should take more serious measures regarding climate change 🌍?

853 respondents out of 871 interviewed



6

What steps do you think UNICEF 🧑🏻 and the Government 🏛️ should take regarding climate change 🌍 and environmental protection in the first place?

826 respondents out of 854 interviewed