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IMPACT OF AIR POLLUTION ON MATERNAL AND CHILD HEALTH PROJECT



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IMPACTS OF AIR POLLUTION ON MATERNAL AND CHILD HEALTH: **MILESTONES AND INNOVATIONS**



Bat-Erdene Bat-Ulzii

*Minister of Environment and
Tourism of Mongolia*

In Mongolia, almost 90% of the overall energy supply is only for heating purposes.

Primarily, they rely on coal as the primary energy source, which has led to increasing levels of GHG emissions and air pollution. Air pollution has devastating effects on the country's environment and socio-economic sectors, including the citizens' health – especially pregnant women and children exposed to toxic pollutants - leading to higher incidence of stillbirth, preterm birth, pneumonia, asthma, lung dysfunction, damage to the brain, etc.

The Ministry of Environment and Tourism has been at the forefront of tackling air pollution together with other ministries and agencies and development partners. As a part of the National Programme for Reducing Air and Environmental Pollution, the Government of Mongolia has banned the use of raw coal in Ulaanbaatar, provided discounts on night electricity

tariffs in ger districts, supported the shift to electric heating and replaced coal-fired heat only boilers in public buildings with clean alternative heating technologies. As a result of these measures, PM2.5 concentrations in Ulaanbaatar have decreased by up to 40 percent.

With the contribution of other donors, the Government of Mongolia has been implementing a number of projects to reduce air pollution in urban areas, and one of the successful projects is "Impact of air pollution on maternal and child health" funded by the Swiss Agency for Development and Cooperation and implemented by the United Nations Children's Fund.

With technical assistance from UNICEF, we have approved priority research on air pollution and an action plan for implementation, an action plan for the implementation of nationally determined contributions to Climate Change, an action plan for the implementation of environmental health, and national building planning and design codes for health facilities, schools, and kindergartens. The AgaanNeg knowledge management platform, managed and maintained by the Secretariat of the National Committee for Reducing Environmental Pollution, is serving as a central knowledge resource and collaboration hub for stakeholders working to reduce air pollution in Mongolia.

The project has made possible the installation of advanced mechanical ventilation systems in six kindergartens and three health facilities, allowing a constant flow of outside air into rooms and providing

filtration, dehumidification, and conditioning of the incoming outside air. This quieter and lower-cost ventilation system has brought a range of benefits, such as improved IAQ, elimination of mold and damp, and a reduction of health problems caused by indoor air pollutants. Over 100 low-cost sensors for indoor air quality monitoring were installed in kindergartens and health facilities, and community-based maternal and child healthcare was institutionalized.

In 2019, the Ministry of Environment and Tourism and the National Committee for Environmental Pollution Reduction signed an agreement with the State Bank, XacBank, and Khan Bank to subsidize loans targeted to home insulation, electric heating, and eco-toilets of ger area residents. UNICEF's flagship cooking, heating, and insulation products (CHIP) package has been recognized as a green product and is eligible for green loans issued by commercial banks. I am pleased to acknowledge that the CHIP package has helped improve indoor air quality for 1000 households in Ulaanbaatar, Govi-Altai, Bayankhongor and Umnugovi provinces, benefiting the whole population in these areas that totals 1,639,712 people. To make CHIP more affordable to people living in gers, the Ministry of Environment and Tourism has taken the strategic step of reducing the annual interest rate on green loans from eight percent to three percent per annum. On behalf of the Ministry of Environment and Tourism and its agencies I express my sincere gratitude to SDC, UNICEF, contributing donors and partners. ■



Stefanie Burri

Head of Cooperation Swiss Agency for Development and Cooperation

Swiss Confederation as well as Mongolia is committed to implement the Agenda 2030 for Sustainable Development. Swiss Agency for Development and Cooperation globally supports initiatives, which contribute to a "greener world", also through measures reducing air pollution. We are convinced that the measures not only make our world much more liveable, but they can - very concretely - at the same time have an impact to improve health and livelihood of people. "Impact of air pollution on maternal and child health" project is an excellent example of those.

On behalf of the Swiss Agency for Development and Cooperation, it is my pleasure to share the results of this project implemented by UNICEF and supported by the Swiss government.

Since the transition from a centrally planned socialist economy to a free market system, Mongolia faced social and environmental

challenges, associated with rapid urban development. Among the various challenges, air pollution is a distinctive problem because it affects almost everyone, from unborn children to the very old, and those who suffer from pre-existing health issues.

While most of the efforts made by the government and development partners focus on cleaner energy solutions and infrastructure, the project successfully piloted and introduced solutions to reduce the risks for children and pregnant women on the ground, in the households, kindergartens and health facilities, as well as at the policy level.

Together with the different key-players, we have contributed significantly to improve primary health services for children and pregnant women to cope better with indoor air pollution and consequently, reduced incidence of pneumonia amongst children and of air pollution related pregnancy risks.

Ulaanbaatar is one of the coldest cities in the world. With long winter months, it is utmost important to keep houses warm and heated. Solutions using electricity instead of coal, which were successfully tested for most vulnerable families in Ulaanbaatar and in the provincial centre of the Bayankhongor province, are being introduced to the local markets. Among the solutions, the cooking, heating and insulation products (CHIP) enable replacement of the traditional coal-based stoves in the Gers¹. A crucial factor for a decision to replace the stoves is the affordability of the solutions,

addressed through green loans provided by the Government of Mongolia and commercial banks.

Together with UNICEF and project partners, the project established the first knowledge platform accessible for all citizens, researchers and policy makers. The platform provides an access to evidence and information on air pollution, as well as to the tools for awareness raising on actions to be taken in households, childcare and health facilities. The <http://www.agaaarneg.mn> platform creates an opportunity for citizens, civil society organisations, researchers and policy makers to coordinate and synergize their actions on air pollution.

Through these innovative solutions air pollution harmful impacts on maternal and child health can be reduced significantly. Key role here is attributed to the young Mongolians, who increasingly advocate for concrete actions to claim their rights for clean air and safe environment. Youth empowerment activities through the "Teen Parliament"² and the Scout Association of Mongolia will continue beyond the SDC support.

On behalf of the Swiss Agency for Development and Cooperation, I would like to thank the Government of Mongolia, UNICEF Mongolia team, the international research partners and my SDC colleagues here in Mongolia. We are confident that our Mongolian partners will sustain the project results and continue their efforts with other partners worldwide and in the country for clean air and healthy people. ■

¹ Traditional felt tents of nomads (yurts).

² The "Teen Parliament" is an initiative of the Mongolian Parliament to bring the voices of young people into decision-making.



Evariste Kouassi-Komlan

*Representative
UNICEF Mongolia*

Today, air pollution affects our daily work and life and limits opportunities for a safe, healthy, and sustainable future. We understand well that air pollution is caused by many factors: infrastructure that we build, services we provide and our own attitude and behavior. We are increasingly aware of how to tackle exposure to air pollution and its impacts on public health.

With the contribution of the Government of Switzerland and many other donors, UNICEF implemented the project "Impact of air pollution on maternal and child health" in 2018-2022 and today, we are proud to acknowledge our achievements in the fight against air pollution, which happened as a result of increased data and evidence, strengthened systems and policies, air quality and healthcare interventions on the ground, community and youth empowerment, innovations to enable coal-to-clean technology

transformation such as cooking, heating and insulation products (CHIP) and inclusive financial services.

UNICEF acknowledges that the data and evidence generated through scientific inquiries, research and studies under the project, have proven tremendously helpful to advocate policies and inform communities. In this regard, we highly appreciate the contribution of academic and research institutions, namely the Mongolian University of Science and Technology, Mongolian National University of Medical Science, National Center for Public Health, Washington University in St. Louis, University of Waterloo, University of Pennsylvania, and University of Birmingham, among many others. Unsurprisingly, academic collaboration between national and international universities and institutions has created new interest, and is now leading to more opportunities in terms of scientific research and

analysis. I also believe the young scientists and students involved in the research and studies have gained competitive advantage in their professions and subject fields.

The generation of young people has expanded their knowledge of air pollution and climate change and learnt critical leadership, advocacy and persuasive skills by talking to their classmates, friends, parents, teachers, citizens and decision makers and acting in their communities. In their journey to learning, advocating, and acting, these children and young people have gained adaptation and mitigation skills - how to anticipate and overcome challenges and find alternative solutions. Three young people participated in large international events: the UNICEF Generation Unlimited event in the New York City, USA, and the 27th Conference of Parties (COP 27) on Climate Change in Sharm el-Sheik, Egypt. I believe that through such global programmes and events

they have been exposed to a global dimension of learning and various examples of youth engagement, and understood better what they can aspire to and how they can better engage in climate change and air pollution actions to improve the situation.

I would like to acknowledge and commend the generous and tireless efforts of our partners in implementing the project, including the Sub-standing Committees of Parliament, the Ministry of Environment and Tourism, the Ministry of Health, the Ministry of Construction and Urban Development, the Ministry of Education and Science, the governments of Bayankhongor, Govi-Altai, and Umnugovi provinces, Ulaanbaatar Municipality, the districts of Bayanzurkh and Songinokhairkhan, the Mongolian Sustainable Finance Development Association, People in Need and the Scout Association of Mongolia, as well as the private sector

represented by banks, non-banking financial institutions and CHIP producers, among many others. Their important role and committed leadership have enhanced the likelihood of our success in achieving our goals.

Throughout the implementation, we have worked with people from communities, community health workers, volunteers, influencers, and members of different social groups. They never stopped working even during the most challenging times of the COVID- 19 pandemic, reaching communities and the most vulnerable.

Looking back, I remain immensely grateful to our donors, partners, colleagues, friends and people of Mongolia who have contributed to this wonderful project towards **CLEAN AIR FOR EVERY CHILD**. Thank you on behalf of myself and UNICEF! ■



DATA AND EVIDENCE



COMMUNICATION

AIR POLLUTION & OUR FUTURE

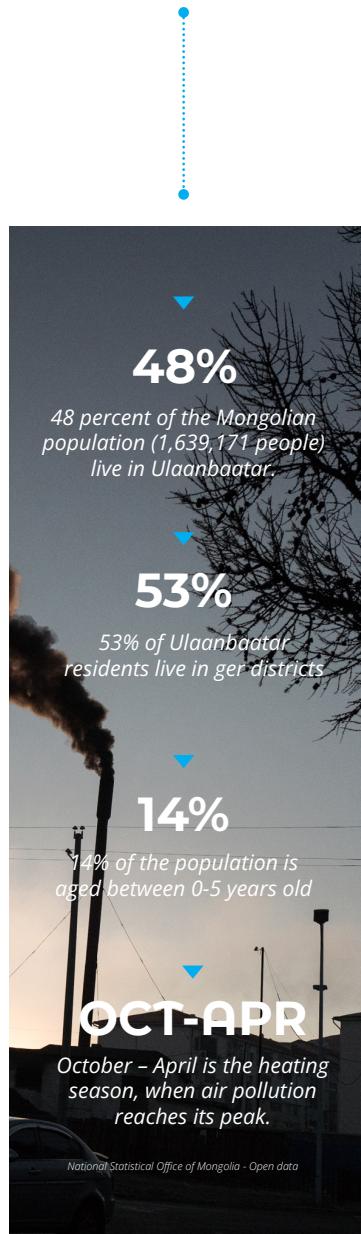
ONE In urban settlements across the country, where 60 percent of the population now live, air pollution can sometimes be tens of times higher than the World Health Organization's recommended levels. However, this is only one part of the picture.

Influenza, pneumonia, and other flu-like diseases have always been common during Mongolia's winter months. Sadly, however, these illnesses have drastically increased in severity due to air pollution. Currently, 300 people die each year due to air pollution-related illnesses, of which 240 are children under the age of five. This figure unequivocally demonstrates that children are the most negatively impacted by air pollution.

So what's causing this crisis? Here, in the world's coldest capital city of Ulaanbaatar, the use of raw coal by households contributes between 70 to 80 percent of the air pollution, with traffic congestion and coal-fired heat-only boilers contributing to the rest.

The Government of Mongolia has taken considerable measures as part of the National Program for Reducing Air and Environmental Pollution -- banning the use of raw coal, a switch to coal briquettes, and a reduction in the cost of electricity during the night. Alongside these actions, the Government has also put forward additional ambitious plans and policies, but the lack of noticeable improvements demonstrates that the actions taken so far are inadequate.

Whilst these policies and plans are well-intentioned, the air toxicity in Ulaanbaatar has not improved, and,



concurrently, the air pollution in Bayankhongor, Orkhon, Umnogovi, Hovd, and Khuvsgul provincial centres has significantly worsened. Stand-alone policies, no matter how sound they may be, are not enough. To bring about long-term, meaningful change, investments in independent research, accessible and reliable information, and citizen participation remain critical. It is also vital to carry out advocacy and training initiatives geared toward reducing heat loss, improving indoor air quality, and ceasing the use of raw coal.

It is here that the Swiss Agency for Development Cooperation, UNICEF and partners have played an important role to support the Government and communities across Mongolia.

The agreement between SDC Mongolia and UNICEF Mongolia to implement the four-year programme on the Impact of Air Pollution on MCH was signed on 5 October 2018. At the impact level, the programme aims to contribute to: 1) reduced prevalence of pneumonia among children under 5; and 2) reduced incidence of pregnancy risks related to air pollution. The programme aims to achieve the following outcomes:

1. Improved capacity to generate and disseminate data, research, analysis and information on air pollution and MCH.

2. Preschool children and pregnant women are at lower health risk from air pollution through community-level risk reduction measures.

3. MCH risk reduction measures are integrated into relevant national and local policies.

SCIENCE TELLS THE TRUTH ABOUT AIR POLLUTION

For nearly a decade, air pollution has remained one of the most debated topics among Mongolia's urban residents, but reliable sources and data on how it affects the overall health of mothers and children were previously very scarce. The situation prompted the Government of Mongolia and partners to capture a complete picture – driven by Mongolia specific data – of the impact air pollution was having on maternal and child health, with the aim of finding optimal solutions to address the problem.

Building on their partnerships, the team of researchers from national and international institutions carried out compelling studies on air pollution and its health impacts: indoor air quality at household level; monitoring of indoor air quality using low cost sensors; direct and indirect costs of absenteeism in the private sector due to air pollution; the use of Internet of Things (IoT) and big data to quantify outcomes and health impacts of air pollution; compounds analysis of PM 2.5 of Ulaanbaatar; emission estimation of the thermal power plant and other stationary sources in Dalanzadgad soum centre, Umnugovi province, and many others.

The collaboration included, but was not limited to, the National Center for Public Health, National Agency for Meteorology and Environmental Monitoring, Mongolian National

University of Medical Science, Mongolian University of Science and Technology, University of Birmingham, Washington University in St. Louis and Waterloo University, enabling strengthened capacity for data analysis, data exchange, joint scientific publications and sustainable long-term partnerships.

The results of the studies and research were profound and informative for policy decisions, public communication and advocacy. In one study from 2019-2020, 80 samples of indoor air quality were collected from 33 schools, kindergartens, and hospitals

THE RESULTS OF THE STUDIES AND RESEARCH WERE PROFOUND AND INFORMATIVE FOR POLICY DECISIONS, PUBLIC COMMUNICATION AND ADVOCACY.

in Ulaanbaatar. Researchers found that 16 samples had traces of formaldehyde and benzene present in the air. Another study of indoor air quality in 2019 on volatile organic compounds also showed higher levels of formaldehyde and benzene in indoor air compared to the WHO-recommended level.

The average of the Carbon dioxide level (CO₂) in kindergartens exceeded 1.2-2.9 times in workdays compared to Mongolia's MNS standard.

A study on the relationship between air quality and asthma concluded that asthma occurs more in winter and during work days, is more prevalent among adults over

Pregnant women's exposure to air pollution affects the lungs and respiratory tract of the unborn child, leading to premature birth, fetal death, and miscarriages.



It is observed that women who become pregnant in the months between November and January are significantly more likely to give birth prematurely in May and August. Other abnormal side effects include:

- Heavy postpartum bleeding;
- Increased abnormal fetal development;
- Increased complications of pregnancy and childbirth;
- Increased stillbirths, premature births, and lack of oxygen.

In the first six months of pregnancy, mothers who breathe air with high levels of PM10 and PM2.5 particles are more likely to have high blood pressure, while nitrogen dioxide and sulfur dioxide in the air at 4-6 months of pregnancy has been observed to cause diabetes.

3.5↑

Fetal death is 3.5 times more common in winter than in summer.

THE EXPERTS STUDIED THE SOURCES OF POLLUTION OF INDOOR AIR QUALITY AND FOUND THAT PM 2.5 PARTICLES GREATLY EXCEEDED THE WHO-RECOMMENDED GUIDELINE LEVELS IN MOST (82-94%) OF THE MEASUREMENT DAYS.

40 and older women, and could be reduced by 80% (5 times less) if/ when Mongolia achieves its target levels of air quality.

The findings allowed the National University of Medical Science and the Mongolian State University of Education to integrate the impact of air pollution on maternal and child health and air quality monitoring into medical, public health and preschool education curricula.

Health complications caused by air pollution are also a significant burden on household finances and the overall Mongolian economy.

The burden of air pollution also extends to the private sector. During winter months, when air pollution is at its highest, labor productivity declines. The productivity phenomenon during winter months was found to be largely caused by absenteeism as employees or their children get sick, causing them to fall behind on, or miss, work. According to a UNICEF-led study, an employee of a private organization operating in Ulaanbaatar loses about 10 percent of their annual income due to air pollution related causes like absenteeism.

In 2022, building on the knowledge of the past few years, the Ministry of Environment and Tourism (MoET) approved the "Action plan for implementation of air pollution related priority

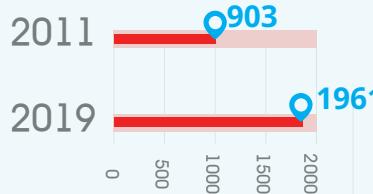
40%↓ 33%↑ 42.4%

The lung function of a child who lives in the polluted area of UB is 40% lower than that of a child breathing unpolluted air.

As a result of high PM 2.5 concentrations, the mortality rate of children under 5 years-old increased by 33% due to respiratory diseases.

In 2014, 42.4 percent of children in Ulaanbaatar under 18 were hospitalized due to puncture w In 2014, 42.4 percent of children in Ulaanbaatar under 18 were hospitalized due to puncture wounds, pounds.

The adverse health effects of air pollution



In 2011, 903 per 10,000 people in Ulaanbaatar suffered from respiratory diseases. In 2019, this number more than doubled to 1,961. This significant increase is easily attributable to the rise in air pollution.

435

In 2015, 435 children died of pneumonia.

A row of four red female icons, each with a circle for a head and a simple body with a skirt, representing women in the workforce.

As of 2018, 1 in 5 deaths from pneumonia were children under the age of 5.



Children in Ulaanbaatar are 5 to 15 times more likely to suffer from bronchial inflammation than children in rural and local areas.

38.8%

In 2018, out of 365 days in the year, the average concentration of PM10 particles exceeded the WHO's recommended tolerance levels on 299 days and PM 2.5 particle concentration on 212 days.

2 National Center for Public Health. "Impact of air pollution on health" speech
 3 Ministry of Health. "Air Pollution in Ulaanbaatar, its health impact" 2013.
 4 National Center for Public Health. "Зарын болхийд зүрүү мэйзэд нийлжүүлэх" илмэгэл
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 15 The Government of Mongolia, SDC, UNICEF. "Costs of absenteeism due to air pollution among private sector companies in Ulaanbaatar,
 16 Mongolia" судалгааны тайрон. 2020.
 17 UCL, Mongolia, University of Birmingham. "Air pollution intervention and maternal and child (<5) health outcomes time-series study in
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 19 The National Center for Maternal and Child Health, UNICEF, SDC. "Impact of air pollution on MCH desk review". 2021.



research, 2022-2025", providing increased opportunities for coordinated cross-sectoral research and collaboration in six thematic directions and bringing sectoral ministries and agencies together. The action plan has created the conditions to continue building a foundation of data through comprehensive research covering all aspects of air pollution. For instance, at the request of the MoET, the "Emission estimation of the coal fired power plant, emission distribution mapping of Dalanzadgad soum power plant in Umnugovi province" was carried out to generate new data on the source of pollutants and their impacts on health, as well as to recommend necessary steps and solutions to reduce air pollution from power plants.

AGAARNEG PLATFORM

Significant efforts have been made to translate scientific evidence into publicly understandable language and simple and short

messages, to reach out to the community and protect people from exposure to air pollution. A report on "Reducing the impacts of air pollution on maternal and child health: the scientific evidence and key messages to the public" has summarized evidence on the health impacts of prenatal and early life exposure to air pollution and provides key messages and communication channels to increase public awareness of the health risks and strategies to reduce exposure and associated health impacts.

AgaarNeg knowledge management platform, launched in March 2021, became operational as a new platform for knowledge management and exchange, which enabled better coordination of initiatives and projects, collaboration between stakeholders, and transparent and open access to resources including information on latest projects, research reports, procurement, consultancy, calls for proposals, and news/stories. The platform's operations

have been transferred to the National Committee for Reducing Environmental Pollution (NCREP), thus ensuring the sustainability of platform functions and its further development and use for policy formulation, dialogues and communication. To date, nearly 50 organisations are using the platform. ■



Scan the QR code
to join AgaarNeg
knowledge platform

WINNING THE FIGHT AGAINST AIR POLLUTION THROUGH POLICY DIALOGUES

Combatting urban air pollution impacts on maternal and child health in Asia: a science and policy dialogue

29-30 October 2019

This international conference brought together 50 scientists, experts, delegates of Asian governments, international organisations from 12 countries, and over 150 national delegates. The conference participants called for an urban clean air action plan, knowledge exchange on air pollution and its impacts, and broader regional cooperation, addressed in the outcome document "Facing the rising risks: Roadmap for regional cooperation to combat air pollution and its impacts on health and development". The lessons shared and ideas exchanged at the conference set the tone for UNICEF and the Government of Mongolia to kick-off national level research priorities and university educational programmes on air pollution and health, as well as strengthening government capacities to communicate about air pollution and health.

Air pollution in a time of COVID 19 pandemic

14 December 2022

This high-level consultation meeting, jointly with the Subcommittee of the Parliament on

Air Pollution Reduction, led to the submission of 18 recommendations to the Cabinet to reduce air pollution in accordance with the National programme for reducing air and environmental pollution, considering the heightened and specific risks due to air pollution and the COVID 19 pandemic. The WHO's Global Air Quality Guidelines require more efforts to improve both ambient and indoor air quality, and countries' obligation and responsibility to protect children's rights to a healthy environment as indicated in the Universal Declaration of Human Rights and the UN Convention on the Rights of the Child.

Accelerating national air and environmental pollution reduction policy for transformational impacts

24 May 2022

• The joint conference, organised with the Subcommittees of the Parliament on Air Pollution Reduction and Sustainable Development Goals, recommended the Government to:

- Stop using coal-fired Heat only Boilers (HoBs) in the capital, particularly to heat kindergartens, schools and health facilities, and make immediate decisions to connect to central systems or transfer to clean energy technology,
- Increase green investments in children's institutions, services, and infrastructure,

- Increase green public investment and green public procurement in infrastructure, facilities and key services for children,
- Support households from target groups to access clean and energy efficient heating technologies through social welfare service mechanisms,
- Develop an institutional mechanism to ensure better indoor air quality and predict health risks caused by construction and decoration materials,
- Introduce IAQ management at schools, kindergartens and health organisations and make it an integral part of accreditation and performance management.

Human rights

27 June 2022

A public hearing of the Social Policy Standing Committee of the Parliament was organised, focused on indoor air quality in kindergartens and schools and volatile organic compounds emitted from building materials commonly used in repair and maintenance. This high-level public hearing resulted in the recommendation of immediate actions to the Government: measures related to the control of imported building materials at borders, capacity enhancement of the state inspection laboratory, and necessary budget allocation in 2023. ■



REDUCE EXPOSURE

SMALL SOLUTIONS LEAD TO BIG GAINS

Improving indoor air quality

INDOOR AIR QUALITY MONITORING

There were still considerable misconceptions among the public that the high levels of outdoor air pollution were a concern but indoor air was clean. UNICEF, in close partnership with the Ministry of Health, Ministry of Education and Science and the National Committee for Reducing Environmental Pollution, worked to educate the public on the risks of poor indoor air quality and the adverse health effects it could bring. To do this, 80 low cost air quality sensors were installed in 70 kindergartens and 10 health institutions. The findings from the monitoring did three things:

- The data empowered and informed parents and local leaders of the high levels of indoor air pollution in their schools and hospitals. With this knowledge, they were able to advocate for indoor air pollution reduction measures;
- Using data from the sensors, UNICEF demonstrated how to address the high level of indoor air pollution through improved ventilation systems and insulation, as well as prompt and effective actions when indoor air quality is poor; and
- The data demonstrated the need for a comprehensive approach to addressing indoor air pollution where data collection and analysis were used not just for reporting but to also take actions. As a result of this approach, the expansion of air quality monitoring within kindergartens and schools is now underway across the country.

AIR VENTILATION SYSTEM

With the support of the SDC, UNICEF developed a model air ventilation system that is suitable for the weather conditions of Ulaanbaatar. Subsequently, the model was piloted in 6 kindergartens and 3 health facilities: the Bayanzurkh Healthcare Center, Amgalan Maternity Hospital, and Dari-Ekh Hospital in Bayanzurkh District.

The air ventilation system installed in kindergarten No.63 is energy-efficient, low-cost, and low-noise. In addition, the kindergarten is heated via electricity. Electric heating costs are lower than heating with coal.

The newly built 24-hour kindergarten, which has a capacity of 100 children, in Gachuurt village, Bayanzurkh district, has many advanced solutions that meet national and international standards for child-friendly educational institutions.

Ambient air quality monitoring

Technical assistance was provided to the National Agency for Meteorology and Environmental Monitoring to strengthen their capacities, enable real time measurement of PM 2.5 and PM 10 nationwide using low cost air quality monitoring sensors, and develop models for forecasting and mapping of air pollution and better analysis of air quality data. In this way, geographical coverage of ambient air quality monitoring, in particular PM 2.5 measurement, has been expanded nationwide. These

interventions made it easier for the public, civil society, and independent researchers to access data on the levels of air pollution in their communities.

Over 150 teachers and administrators of kindergartens in the Bayanzurkh and Songinokhairkhan districts of Ulaanbaatar, Bayankhongor, Govi-Altai and Umnugovi provinces were trained about indoor air quality, its measurement, and simple but effective measures to improve air indoors.

With the success of these small pilot models, the Government of Mongolia took a giant leap forward.

• The Ministry of Health in Mongolia approved the 2021-2024 Action Plan for implementation of the “National Environmental Health Programme”, which includes improvement of air quality measurement to reduce the adverse effects on health. To support the Ministry in fully realizing their plan, UNICEF committed to contributing to the introduction of air purification technology, increasing the use of clean fuels, reducing building heat loss, expanding the coverage of vaccines against pneumococcal or pneumonia, and many other measures.

• The Ministry of Construction and Urban Development updated and approved national codes on building design and planning of hospitals, schools, and kindergartens based on the pilot insulation and ventilation systems demonstrated by the programme interventions. These updates of national building codes mean that tens of thousands of children will one day experience a learning or hospital environment where the air is clean and safe to breathe.

WHAT HAS BEEN ACHIEVED?

80 devices

A total of 80 indoor air quality monitoring devices were installed in 70 kindergartens and 10 health centers.

67 locations

By installing small, low-cost air quality sensors (Purple Air) in 67 locations across the country, PM2.5 particles were measured in Ulaanbaatar and all 21 provinces.

1 monitor

BAM 1020 PM2.5 continuous reference monitor was installed in Bayankhongor province.

6 kindergartens

In Bayankhongor province, one kindergarten was recognized as a benchmark for retrofitting and advanced mechanical ventilation system. In Bayanzurkh district, two new kindergartens with advanced automatic ventilation systems were built and 3 existing kindergartens were equipped with advanced mechanical ventilation systems.

1250 children

Today, more than 1,250 children aged 3 to 5 years have the opportunity to breathe clean air as their kindergartens are equipped with air ventilation systems.

Community-based maternal and child healthcare

In November 2018, The World Health Organization issued guidelines for the operation of Community Health Workers. Community based maternal and child healthcare (CMCH) seeks to deliver child health interventions to mothers and children by improving key family practices to better prevent illness in the home, manage illness when it occurs and seek preventive and curative services when necessary. UNICEF rolled out an international approach for the training and empowerment of community-based health workers in Mongolia. In total, more than 500 community members were trained to provide primary healthcare services at the hyper-local level. As a result, the community health workers were able to provide support to thousands of pregnant women and children living in remote villages and districts.

The success of the community health workers has largely been a result of how they were selected. Each health worker was chosen and trained directly from within their communities and employed on a voluntary basis. This approach ensured that the community health workers would understand their local context and be a familiar face that families could trust. This approach not only aligned with the national healthcare system's efforts, but also helped to make soum health centers more accessible and to fill the shortage of human resources in the health sector in hard-to-reach communities.

Specifically, community health workers were trained to:

- Educate their communities on how to reduce exposure to indoor air pollution;
- Build habits for parents to seek for medical help;
- Monitor and advise pregnant women;
- Prevent diseases prevalent in infants and young children through vaccine education;

- Identify early signs of malnutrition and other harmful diseases; and
- Direct families to primary care physicians when/where needed.

The community health workers' interventions have been critical in preventing diseases that commonly occur in infants and young children and providing medical care in a timely manner.

Codifying the community health workers approach, the Ministry of Health together with UNICEF held a conference under the theme of "Encouraging Public Participation in the Strengthening of Human Resources in Health Sector and Sustainable Development Goals". The participants, including the district governors of all provinces and representatives from the Citizens' Representative Khural (Parliament), agreed to localize this approach across Mongolia.

"Primary health care is the main tool to achieve the Sustainable Development Goals and universal health coverage," said Ms. Ayako Kaino, Deputy Representative for UNICEF in Mongolia, during her speech at the opening of the conference.

"Universal health coverage means moving from a disease- and hospital-centered model to one that focuses on the citizens and incorporating health issues within the entire life cycle of a person, not just limited to the health sector, to ensure equality."

Today, the Ministry of Health is integrating community-based maternal and child health care into their broader healthcare system. Thanks to the investments for this pilot by UNICEF and the SDC, the Ministry now believes that instead of providing healthcare only within the confines of a traditional brick and mortar facility, healthcare can in fact be provided via a community-to-community approach. At its core, this approach empowers citizens, local governors, district committees and other stakeholders to ensure that 'no one is left behind' and guarantees that healthcare is accessible for all.■

POLICY AND PLANS

for every child



unicef 

MUCH-NEEDED CHANGES IN NATIONAL AND LOCAL POLICIES



To protect the future from the effects of air pollution and reduce the economic burden to come, protecting the health of children and adolescents from air pollution should be the priority of national policy.

UNICEF, in close cooperation with the Ministry of Environment and Tourism, Ministry of Health, and local governments, and with financing from the SDC and other donors, made the necessary changes in national, provincial, and local policies.

NATIONAL LEVEL POLICIES AND PLANS

- Action plan for implementation of National programme on environmental health (2021-2025);
- Action plan for implementation of Nationally determined contributions (NDC) to Paris Agreement 2021-2025;
- National code on hospital building, planning and design (Jan 2021); National code on school building design (2022); National code on kindergarten building design (2022);
- State green loan for CHIP in 2020 (8% interest rate loan released by 3 commercial banks) and in 2022 (interest rate has been decreased from 8% to 3%);
- The priority research themes and the "Action plan for implementation of air pollution related priority research, 2022-2025;
- Mid-term environmental policy to 2030 (Submitted to the Parliament).

SUBNATIONAL LEVEL POLICIES AND PLANS

Instrumental to the success of this work has been

the cooperation with provincial and local governments. For instance, the "Clean Air Action Plan", which was developed and implemented with the technical assistance of UNICEF and the Bayankhongor Provincial Government in 2019, became the basis for the implementation of similar programmes in Umnugovi and Govi-Altai provinces. Notably, the Bayankhongor, Govi-Altai and Umnugovi province administrations budgeted 1.25 billion MNT for the implementation. The 370 million MNT were allocated for both of the Bayanzurkh and Songinokhairkhan districts for air pollution reduction activities, air quality monitoring, and CHIP project rollout.

- Bayankhongor Clean Air Action Plan 2019-2022
- Umnugovi Clean Air Action Plan 2021-2024
- Gobi-Altai Clean Air Action Plan 2021-2024

Approval of these national and subnational level policy and planning documents have led to increased state and local budgets to reduce air pollution and its impacts on maternal and child health.

FEASIBILITY OF LOW CARBON TECHNOLOGY FOR PUBLIC BUILDINGS

The technical and economic feasibility study on transforming coal-fired heat only boilers to ground source heat pump for kindergarten, family health center and bag administrative buildings is ongoing in Bayankhongor province. When realized, this solution will significantly reduce green house gas emission, improve air quality and reduce waste from coal burning.

COOKING, HEATING AND INSULATION PRODUCT - CHIP

The government's policy to introduce improved/refined coal to households and increase the use of electricity for heating was relatively challenging for urban households using traditional heating technologies including 91,249 ger households in Ulaanbaatar. Although various air pollution reduction technologies have been introduced internationally, they are rarely suitable for Mongolia's climate, where winters are as cold as -45 degrees Celsius.

However, the introduction of CHIP, an innovative system for Mongolian ger insulation, heating, and ventilation, with the cooperation the School of Civil Engineering and Architecture of the Mongolian University of Science and Technology, local governments and the People in Need INGO, became a very suitable, energy efficient, affordable and practical solution for Mongolia's situation. An external evaluation by the Swiss Institute of Infectious Diseases and Public Health (TPH) praised the results and implementation of the project and concluded that it contributes greatly

to social and gender equality. This is because CHIP users not only save money, but also save more than 40 minutes a day.

In addition, this reduced the amount of indoor PM 2.5 and PM 10 particles created through the burning of raw coal, which releases toxins such as sulfur dioxide, carbon dioxide and carbon monoxide. These toxic chemicals harm the health of children, who are already growing up in an environment with high risks for food and drinking water.

At current, more than 1000 households in Bayankhongor, Govi-Altai, Umnugovi and Ulaanbaatar and kindergartens have solved their heating and air quality challenges by using CHIP. This not only helped them to live comfortably during the cold season, but also helped reduce the risk of children being exposed to household burns. This transformation to clean technology has benefited the entire population of the provincial centers and Ulaanbaatar, totalling 1,718,380, or 72.6% of the total households living in urban areas of Mongolia. ■



CHIP users by population groups



1629



1477

Number of household member



259



212



259



212



339



402

Number of children 6-18 ages



25



38

People with disability



34

Pregnant women



263



178

Elders



169



58

Single parents



T. Rys with grandchildren, CHIP package user
family of Bayanzurkh district
Photo credit: People in Need Mongolia NGO

INCLUSIVE FINANCING SCHEME FOR CHIP

CHIP is financed through a blended financing scheme – a subsidy from local government and project funding, green loans subsidized either by the government (Ministry of Environment and Tourism) or non-banking financial institutions and personal investment. Taking the results of CHIP project into account, the Government of Mongolia agreed to provide green loans with a below-market interest rate of 3 percent per annum to households that are interested in the package. This was an important decision to protect the health of 2,367,364 (2021, NSO) people living in the capital of Ulaanbaatar and other urban areas from air pollution.

The subsidies cover 50-70 percent of the total CHIP price. The government green loans are released nationwide through Khaan, Xas and the State Bank of Mongolia. In addition, the private

sector has contributed its own resources: Ulaanbaatar Investment and Management invested 80 million MNT in non-banking financial institutions (NBFI) to provide loans for CHIP and the "Numur Credit" NBFI started providing green loans to families in Gobi-Altai province with their own funds. This approach ensures the long-term sustainability of CHIP. To date, 100 families have received green loans for CHIP packages.

The implementation of the project has been delayed due to unavoidable external challenges, such as the closure of the Chinese border and the bans and restrictions caused by the Covid-19 pandemic. However, though there have been some delays, these challenges did not prevent the implementation of this project, which has become a centrepiece of national and local efforts to combat air pollution.

DATA

3%¹⁵

Commercial banks in Mongolia offer loans to citizens with a 15% interest rate, but for CHIP, thanks to the green loan, they have been reduced to a 3% annual interest rate.

2 times lower interest rate:

Loans from NBFI to citizens average around 38 percent interest. MSFA has worked closely with NBFI to provide green loans at 18-21.6 percent interest

30 months

Green loans are issued by commercial banks and non-banking financial institutions alike for a period of up to 30 months.



INNOVATION DRIVE FOR CLEAN AIR

Stay warm, safe and
healthy through the
winter

have five children. The little ones were at high risk of being burned because of the stove. I made a wooden fence to protect my kids from the stove, but it was too difficult for me as a visually impaired person. I would've fallen over it. Therefore, I was looking for electric heaters. I first learned about the CHIP project's insulation, heating, and ventilation packages for the Mongolian ger from my Khoroo office and I have been using it since November 2021.

"I AM BUYING THE CHIP PACKAGE FOR MY PARENTS THIS WINTER WITH THE GREEN LOAN."

It helped me a lot that the CHIP Package was three times cheaper than the same type of products, and it was possible to get a loan. Now, we are not making fire to heat our Ger, but it's really warm. In September 2022, when the weather got cold, we turned the heaters on for a long time, but the cost of electricity was only 78,000 MNT. It shows that the expenditure of using the CHIP package is cheaper than burning coal.

The CHIP heating package has a thermostat that automatically adjusts the temperature. It turns off when the indoor air temperature of the ger reaches 30 degrees Celsius and turns back on when it approaches 20 degrees Celsius.

The CHIP heating package is installed on a cabinet and has an outlet for electric cooking pots. Most electric heaters make the indoor air too dry and it dries out a person's throat, but this heater does not. The ventilation system is perfect. Heat loss is low because the door and top opening insulation are designed precisely according to the size of the Mongolian ger.

Although there was much rain in summer and autumn, it was not uncomfortable thanks to the CHIP package. The bottom of the wall has insulation that is 20 cm high, so rain or dirt doesn't get inside. I am now going to buy the CHIP package for my parents this winter with the green loan. ■



B. MUNKHJARGAL

CHIP user in 16th khoroo,
Bayanzurkh district

WHAT'S DIFFERENT ABOUT CHIP?



Electric heating package ▶



Thermostat to control electric heater



The Mongolian Ger is a round tent-like shared with 1 large room, and the heated area is 28.5 m². A stove is located in the centre, fired with solid fuels, such as raw coal, firewood, and briquettes. Incomplete combustion of coal in low-efficiency stoves is one of the major causes of air pollution and per capita GHG emissions. On average, a household living in a ger uses approximately 3- 4.5 tons of coal and 1.0-2.5 m³ of wood during the heating season. The heat loss is enormous in a ger.

WITHOUT CHANGING THE GER'S STRUCTURE AND SHAPE, CHIP OFFERS THREE PACKAGES OF SOLUTIONS: AN INSULATION PACKAGE, AN ELECTRIC HEATING SYSTEM WITH THERMOSTAT, AND A VENTILATION SYSTEM.

Extra layers of insulation:

The CHIP ger demonstrates improved insulation by utilizing

synthetic textiles - a thick tarp-like, durable, and dense material with a middle layer of recycled insulation to better hold in heat and block external wind. Heat loss through a joining point between the floor and wall is reduced as it is covered with this synthetic insulation, eliminating energy losses. The material used for this measurement is recycled textile felt that can be found in the local market.

Electric heating:

Three electric heaters with a capacity of 0.8kW are attached to a wooden box and face each side of the ger, located in the center of the ger to transmit heat equally into all parts of the home. The electric heaters are monitored with an automatic thermostat. Accordingly, the heat spreads evenly throughout the ger while reducing the heat loss between the floor and walls.

Air filter and ventilation:

The air filter is placed on the door and the exhaust air opening is attached to the top opening. As a result, the system constantly circulates the air.

DATA

1000 Households and Ger kindergartens

The CHIP packages have already been installed in more than 1000 households, 17 kindergartens, and schools across Bayankhongor, Govi-Altai, and Umnugovi provinces, and Bayanzurkh and Songinokhairkan districts in Ulaanbaatar city.

Automatic setting:

When the temperature inside the ger drops and reaches a certain level, the electric heater automatically turns on and off thanks to the introduction of a thermostat.

3 - 4.5 tons of coal removed

CHIP-user households are no longer burning 4.5 tons of coal nor a huge amount of wood during the heating season.

Burns:

The risk of burns caused by firing a stove was nearly eliminated.

90%

% of CHIP users agreed that CHIP improved their gers' indoor air quality, and 89% of respondents said that air intake fans are safe for their health and comfort.

56000

A CHIP-using household spends 56,000 MNT less than a household that heats the ger with a traditional stove in the winter.

40-90 minute

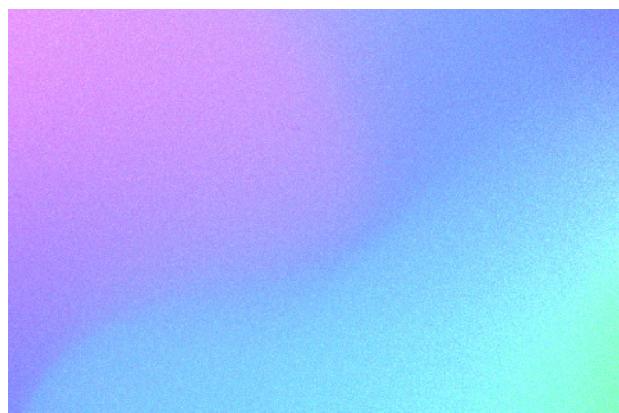
On average, CHIP-using households save approximately 40 - 90 minutes per day. An external evaluation found this was very beneficial, especially for women.



WHAT CANNOT BE MEASURED CANNOT BE MANAGED



**Real time measurement of
air quality**



S

ince 2011, I have been working on different projects aimed at measuring air quality in Mongolia and studying how air pollution affects the human body. Air pollution measurement in Bayanzurkh district and Bayankhongor provinces in cooperation with UNICEF is the third project I participated in.

"IT IS IMPORTANT FOR CITIZENS TO RECOGNIZE AND USE THE RESOURCES OF ALL LOW-COST MEASURING DEVICES."

We completed air measurement in a total of 29 kindergartens and 6 health centers with low-cost air quality monitoring sensors. However, both PM 10, PM 2.5, and carbon dioxide levels were higher than expected.

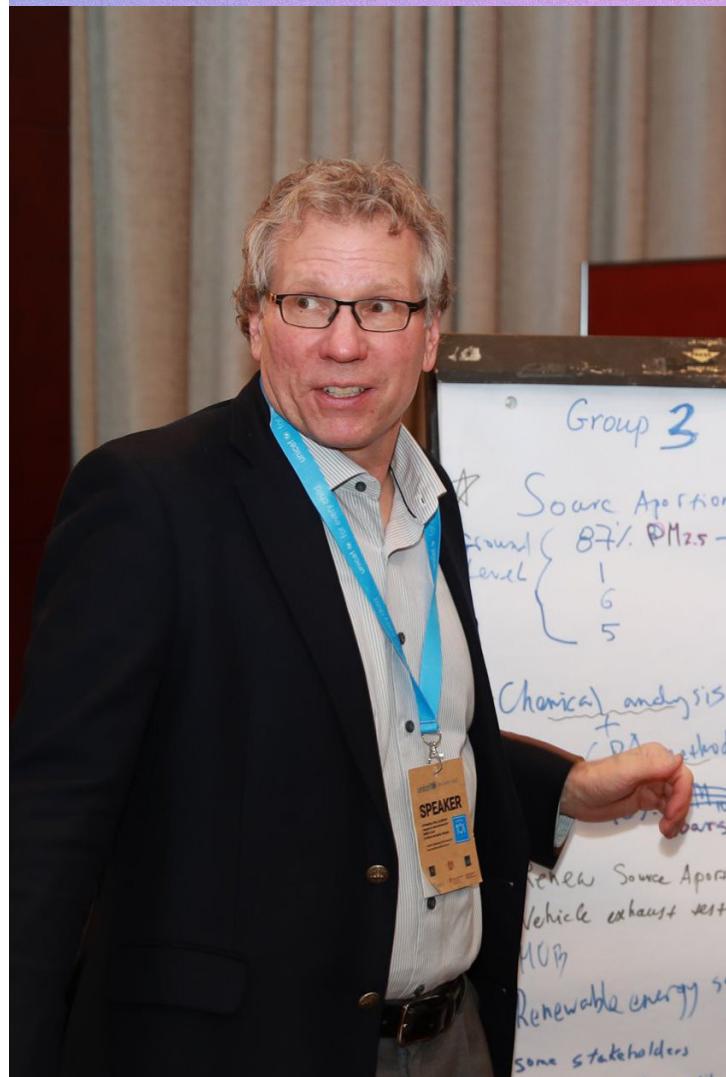
For example, the city center gardens are located close to each other, but the indoor air quality is different. This is due to the different sources of air pollution.

For example, the research showed that indoor air quality depends on many factors, such as the number of children overloaded, the insulation of the building, the structure of the building, the materials used, whether the building is old or new, and so on.

Regarding outdoor air pollution, PM 2.5 and carbon monoxide levels vary between times of the day. Therefore, by continuously measuring for 24 hours, we know how much air pollution there is at a certain time of the day, and what are the main sources of pollution, and then by making the hourly data available to the public, any of us can get air quality information at any time.

Currently, UNICEF has installed small air quality sensors in 67 locations across the country, and it is commendable that our air quality measurement network continues to expand.

This winter, it is able to measure air pollution in more provinces in collaboration with the National Agency of Meteorology and Environmental Monitoring. Above all, it is important for citizens to recognize and utilize the availability of low-cost measuring devices.■



JAY TURNER

A professor at
Washington University
in St. Louis, USA

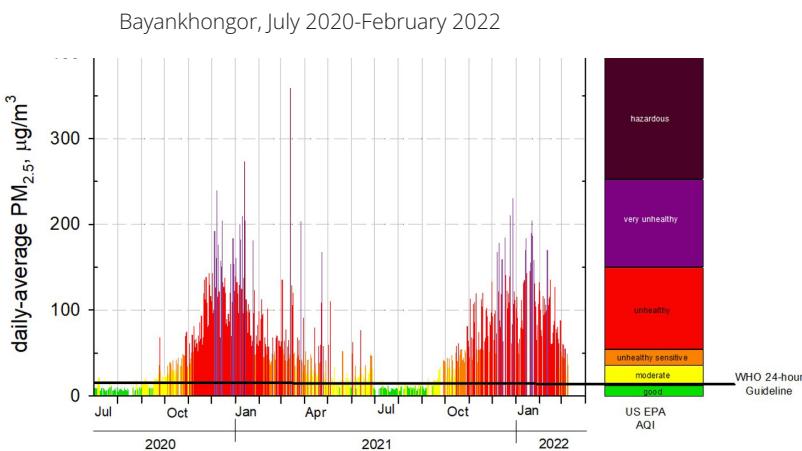
REAL TIME MEASUREMENT OF AIR QUALITY

One of the significant measures carried out within the framework of the programme "Reducing Impacts of Air Pollution on Maternal and Child Health" is the creation of a system for the 24-hour continuous measurement of indoor and outdoor air pollution, and the subsequent development of solutions against air pollution based on actual research and statistics.

Air pollution measurements and research was also carried out, in cooperation with the UNICEF and the National Agency for Meteorology and the Environmental Monitoring, led by

"The amount of fine particulate matter or PM 2.5 in Ulaanbaatar city air is 40 to 50 times higher than the tolerance limit set by the World Health Organization (WHO) in winter."

Professor Jay Turner of WUSTL and B. Munkhbayar, Director of the Building Energy Efficiency Center of the Mongolian University of Science and Technology. Together they installed a BAM 1020 air quality monitoring reference station in the center of Bayankhongor province, which measures and reports PM 2.5 particles every hour, to measure air pollution in the outdoors, as well as organising training for local experts on how to operate the air quality monitor. The monitor records the amount of fine PM 2.5 particles, and the collected data is uploaded to the website in a way understandable to the public.



What is the importance of regular measurement of ambient air pollution?



Recognizing the most polluted time of day



Citizens will monitor air quality and pay attention to reducing exposure to air pollution



Planning air pollution abatement measures



Developing air pollution prediction models



Decision-makers will take effective measures for target groups.

AIR QUALITY MAPPING

As a result of the installation of low-cost air quality sensors by UNICEF in 67 locations throughout Mongolia, the air quality is measured in the capital Ulaanbaatar and 21 provinces. A local NGO, Breathe Mongolia - The Clean Air Coalition, processes the data collected by the low-cost air quality sensors and then visualizes the data in the form of a publicly available and easy to understand map.

GRAPHIC / AIR QUALITY INDEX/

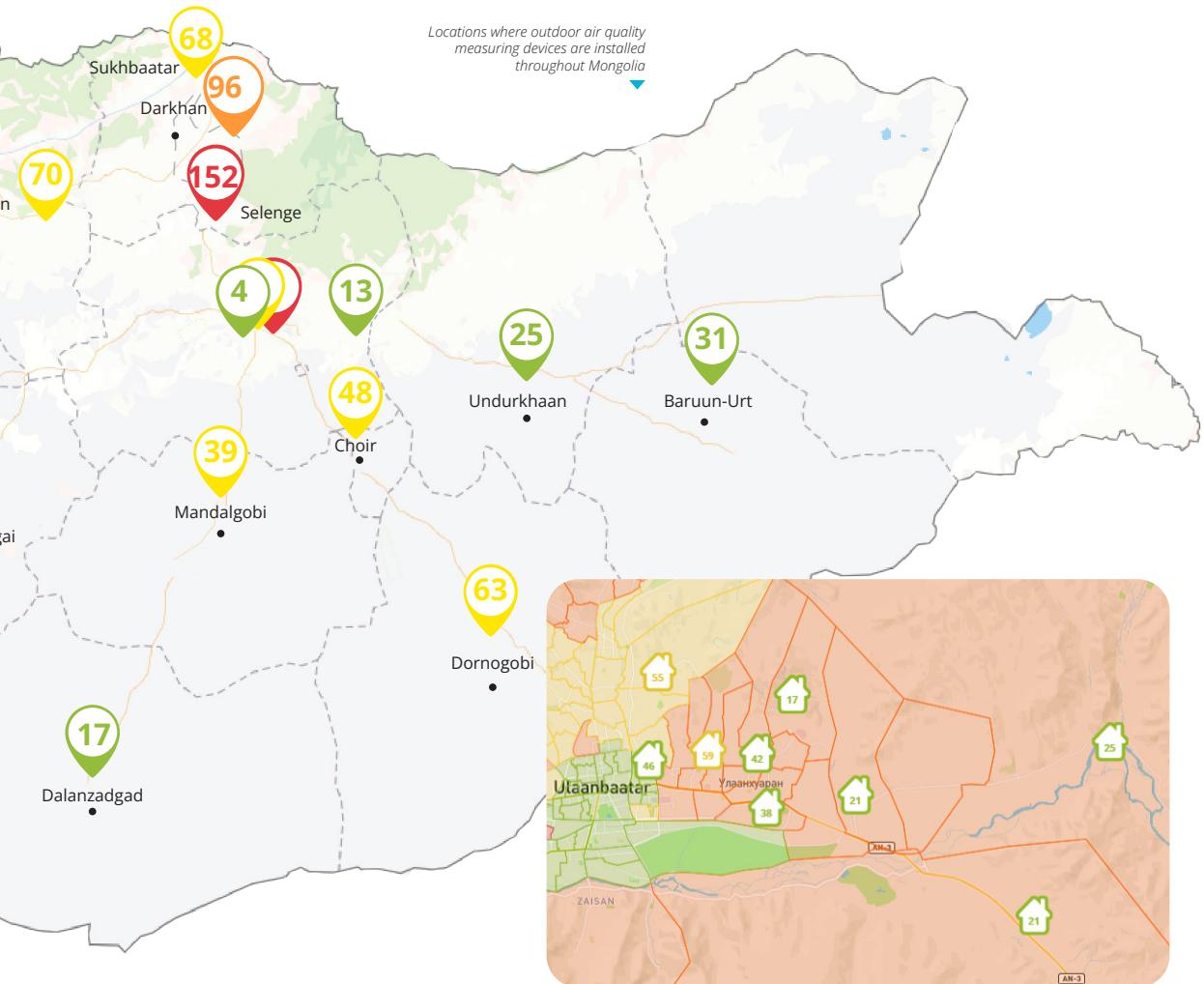
0-50	51-100	101-200	201-300	301-400	401-500
Good	Moderate	Unhealthy for sensitive groups	Unhealthy	Very unhealthy	Hazardous



Locations where outdoor air quality measuring devices are installed



Locations where indoor air quality measuring devices are installed



Scan the QR code
to find out today's
air quality.



COMMUNITY-BASED HEALTH CARE SERVICE



Leaving No One Behind

G

.Buyantsetseg worked her entire life at a hospital. When she retired, she still loved every bit of her job. In fact, she actually really missed it.

"When UNICEF announced a project to train volunteers to provide health advice and services, I enrolled in the training immediately. I started working here in the Family healthcare center," Buyantsetseg recalls.

Although Buyantsetseg spent her life around the healthcare sector, she was still nervous, as it is often assumed, rightly, that to volunteer at a hospital, one must gain an in-depth knowledge of health education and what to consider when providing care in health services.

To help get Buyantsetseg and the other community health workers up-to-speed, Doctor Sh. Oyukhuu provided training and shared invaluable knowledge and experience with the trainees.

After the training from Dr Oyukhuu, Buyantsetseg gained more confidence.

"We were mobilized to take care of pregnant mothers and newborns, and answer questions from local citizens over the phone during the peak of the COVID 19 pandemic, during the quarantine, and when the quarantine was relaxed. To this day, I enjoy doing this work," she said.

It's not only medical professionals and volunteers who have been involved directly in the programme but also local citizens.

Many of the trained community health workers are ready and eager to lend a helping hand – day or night.

"The volunteer hotline can ring at any time of the day. Most of the registered calls are requests for assistance from people whose children have caught a cold or pneumonia," said Buyantsetseg.

The community health workers also provide information on preliminary tests result for early detection that are covered by health insurance. If people call to request their scheduled injections, a community health worker like Buyantsetseg will even show up to do the injection. ■



G.BUYANTSETSEG

A volunteer at "Eruul Orshikhui" Family healthcare center in the 32nd Khoroo, Bayanzurkh District

REACHING THE UNREACHABLE

IT is vital for everyone to receive quality healthcare services when they need them, regardless of where they live. In particular, the need to provide adequate health services to the remote khoroos and soums of Mongolia continues to grow. Primary care services should focus on leaving no one behind by adopting strategies that target vulnerable and abandoned population groups.

When the "Impacts of Air Pollution on Maternal and Child Health" Programme started, human resources within Mongolia's health sector were under active discussion, as staffing shortages, particularly in remote communities, were a growing concern. Many believed that community participation within primary care could have a profound impact on Mongolia's health system. But, 'how' to do it was a puzzle.

Since then, the introduction of the community health workers initiative has become a transformative approach to addressing the human resource challenges within the health sector, filling the gap with their support, enthusiasm, and active engagement. Many countries have been recruiting community health workers in accordance with their socio-economic conditions, and Mongolia has now joined this practice.

Community health workers that completed special training are able to provide basic health advice and services. These are essential roles that enable households to continue receiving basic health services, particularly those who live in remote areas far from urban settings, are difficult to reach, have not

registered within their district, or are internal migrants.

In addition to supporting families in their khoroo or bagh communities by monitoring pregnant women, preventing diseases that commonly occur in infants and young children, and helping to ensure prompt access to hospital services, many

IN 2020, A TOTAL OF 106 CITIZENS WERE SELECTED AND STARTED THE TRAINING TO WORK IN GROUPS OF 5-6 IN THE MOST REMOTE AREAS OF THE BAYANZURKH DISTRICT.

community health workers are also helping to eliminate social discrimination.

The pilot phase of the Community Health Worker training project, which was established in 2019, began with the training of specialists in 18 khoroos located in the ger districts of Bayanzurkh district. Moreover, a training room for Community Health Workers was furnished and equipped in the district.

Even during the COVID quarantine period, community health workers participated in four comprehensive online training sessions, and, as a result of the programme's constant counseling and support, these community health workers helped immensely by filling the gaps in the workload of primary healthcare center medical doctors and nurses during the pandemic – often giving advice to citizens over the phone and



contacting patients' families during the difficult times.

As a result of the project, a total of 545 community health workers have been trained, and primary health advice and services are provided regularly in Bayanzurkh district and Bayankhongor, Govi-Altai and Umnugovi provinces.

United to support others, community health workers, outfitted in blue vests, are dedicated to helping people living in remote soums and districts to access timely health services. They have been trained to help others, devoting their time and care for the betterment of their community's health.

Community health workers continue to be celebrated and praised by the primary health care center doctors and nurses for their enormous support. ■

A photograph of four young people, three girls and one boy, wearing dark jackets and face masks. They are in a huddle, with their hands raised towards the sky. The background is a hazy, smoky sky with industrial smokestacks emitting dark smoke. The image is framed by a colorful border at the top and bottom.

YOUTH CANNOT WAIT FOR KEEPING SKIES BLUE AND CLEAR



Though the reality of air pollution facing Mongolia is dim, there's also hope in future.

I am a 2021 graduate of the "Teen Parliament" project implemented by UNICEF in partnership with the Parliament of Mongolia.

Thanks to this valuable [Teen Parliament] project, I became aware that our earth needs the care and support of children and youth. I've just arrived in vibrant New York City after traveling from Govisumber, the tiniest province in Mongolia.

I am representing my country, my peers, and the "Teen Parliament" programme at the UNICEF's "Generation Unlimited" conference in New York. As in Lego, if one piece is missing, the set cannot be completed and I would like to urge every single person in the conference to safeguard the environment as a whole.

I am the youngest among the young peers from around the world present at the conference. "You're only 16 years old, aren't you brave for coming here by yourself?", the question is an encouragement for me and serves as a reminder to me that there are opportunities for all young Mongolians.

As soon as I got off the plane, I learned a phrase I had never heard before: "jet-lag," which refers to a time difference and changes in sleep schedule. I came to the realization that you may learn new words and phrases without memorizing them right away or consulting a dictionary; instead, you can learn the word from the context of the sentence and use it in conversation.

The conference coincided with the UN General Assembly. I went to urge all countries to realise that we need each other.

The main reason I was chosen for this conference was that I act and advocate to reduce pollution in my neighborhood and schools and I have a passion for better environment. Also, my English is good enough to communicate with other young people and express myself. So, being a remote student does not limit chances and I believe children who put in the effort will therefore have access to endless opportunities.

This year's Generation Unlimited conference included a wide range of topics, but the ones that caught my interest included those related to the environmental rights of children, children's rights to an education, and mental health. Due to the COVID quarantine, people are experiencing psychological issues and feelings of loneliness. Education about mental health is therefore crucial for everyone's recovery. ■



O.MUNGUNGUNZUL

11th grade student from
the Govisumber
province of Mongolia

DATA**1.015.250** people

"20 Days of Activism"
Content on air pollution and climate change was developed and delivered to 1,015,250 people across Mongolia.

11600 KM

The "20 days of activism" was organized to encourage children and young people in their communities across Mongolia to learn, share, and directly engage with local leaders on issues concerning them on the environment and climate change.

60000

children and youth

More than 60,000 children and youth were directly engaged and informed about air pollution and climate change.

158.641 people

In 2021, a three-day youth summit on "Climate Change Through the Eyes of Children and Youth" was organized online, reaching 158,641 people.

90 day

Approximately 4,000 air pollution measurements were taken over a 90-day period.

8894 children

In order to increase the membership of the "YOUCCAN" network and expand the scope of activities, an online mobilization drive was organized. In total, 8,894 children and young people directly participated.

EMPOWER YOUTH ADVOCACY FOR CLEAN AIR AND CLIMATE CHANGE.

There are 1.2 billion young people aged 15-24 worldwide, making up 16 percent of the global population. As climate change becomes an urgent issue for everyone in the world, children and young people are increasing their activism. The children and youth of Mongolia are also united for a future that is sustainable and free from toxic air pollution. In Mongolia, with support from UNICEF and the SDC, ten of thousands of children and

young people have engaged with YOUCCAN - Youth for climate change and clean air network, the Teen Parliament, a united platform of youth participation, and Serser.mn - a platform for children and youth to evaluate the implementation of climate policies. These youth networks continue to unite young people by expanding their circle and meaningfully engaging them in the following activities:

YOUCCAN ▶ Youth for climate change and clean air network



IN 2019, UNICEF and the Scout Association of Mongolia established the Youth for climate change and clean air network (YOUCCAN) initiative. Subsequently, in 2019, as a part of the 30th Anniversary of the Convention on the Rights of the Child, the 6th National Jamboree of the Scouts Association of Mongolia was organized. With more than 1,000 participants in attendance, YOUCCAN members and UNICEF delivered lessons and information on how climate change and air pollution impact their lives. To this day, UNICEF and the Scouts Association of Mongolia continue working collectively to advocate for the rights of children and young people to participate in decisions that will affect their future. About 9,000 children and young people from all over Mongolia have joined the YOUCCAN network.

For tens of thousands of Mongolian households affected by air pollution, drought, desertification, forest fires, and other climate related issues, this film highlights the fact that climate change is not distant news, but a reality today. The film was showcased to an international audience during COP26 in Glasgow, Scotland – and even shared on social media by world renowned journalist and author Naomi Klein.



Scan the QR code



TEEN PARLIAMENT INITIATIVE

▶ platform for youth engagement

The Teen Parliament is initiated by UNICEF jointly with the Subcommittee of the Parliament of Mongolia on SDGs - a gathering of Mongolian adolescents and young people empowered to advocate for climate action and the achievement of the Sustainable Development Goals.

"On the issue of climate change and air pollution, I first implemented a micro-project as part of the Teen Parliament project, but now I am happy to contribute to solving this problem on behalf of the children and youth of Mongolia," said M. Garid, President of the National Children's Council of Mongolia, member of the Teen Parliament 2021, and youth delegate from Mongolia at the 27th Conference of Parties (COP) on Climate Change to be held in Sharm el-Sheikh, Egypt. Heads of state, politicians, diplomats, civil society representatives, activists, thought leaders, and members of the media and the public - including children - from the 198 signatory countries of the United Nations Framework Convention on Climate Change (UNFCCC) are joining the COP 27 to work out policy measures, constructive agendas, and collective efforts in battling climate change and various climate-related problems.

Young people like Garid who join the Teen Parliament gain knowledge about the Sustainable Development Goals (SDGs), universal rights of children, climate change and air pollution, democracy, human rights and lawmaking, and the decision-making process.

"Participating States shall ensure that children who are capable of forming their own opinions have the right to freely express their opinions on all matters concerning them, and shall give due weight to their opinions, taking into account the child's age and maturity."

The Teen Parliament also provides opportunities for children and young people to raise their voices and increase their participation in the process of initiating, developing, and implementing laws. Garid was one Teen Parliament Member that was never shy to express his frustration about growing-up in the polluted city of Ulaanbaatar.

The Teen Parliament initiative continues shaping and supporting young people like Garid to hold the Government of Mongolia accountable to their global climate commitments and empower a new generation of climate sensitive young leaders.



"I spent my childhood in the winter of Ulaanbaatar city, full of smoke and soot, and it was difficult to even see the road ahead. As a result, not only me, but the health of every child and person is affected by years of toxic air pollution," said Garid.

SERSER.MN

▶ A platform for children and youth to evaluate policy implementation.

By using this online platform, children and young people are able to find information about the environment and climate change, expand their knowledge, and evaluate the progress of key policy commitments.

CHRONICLE

Aug 26, 2021- Sep 25, 2021

The selection process for the Teen Parliament was held online across Mongolia – with 907 applications received.

Oct 02, 2021

The opening of the programme was successfully organized.

Oct 02, 2021 – May 15, 2022

For 12 weeks, the participants attended classes on the topics of parliamentary education, climate change, sustainable development goals, healthy food and proper diet, and personal development, and engaged in advocacy work.

Nov 08, 2021, and May 05, 2022

The members conducted advocacy work on two topics; "Climate change" and "Healthy food and Healthy future" with participants from 21 provinces and districts of Ulaanbaatar city.

Aug 26, 2021 – May 15, 2022.

The content reached 274,101 people.

May 11-14, 2022

The first closing ceremony of the Youth Parliament 2021 was held in Ulaanbaatar.

September -October 2022

Teen Parliament 2022 was announced, focused on sustainable energy, and parliamentarians were selected.

November 05, 2022

Teen Parliament 2022: - Launch event was organised.

Source: Activity report on Youth Parliament program, UNICEF

339

The number of days in the year where the concentration of fine particles in the air of Ulaanbaatar exceeds acceptable levels.

Research Report on Cost of falsehoods due to air pollution among private sector companies in Ulaanbaatar, Mongolia, UNICEF

7x

Air pollution has reached dangerous levels: The city's population is exposed to 7 times more pollution than the annual average fine particulate matter (PM 2.5) recommended by the WHO.

Report on Understanding and addressing the impact of air pollution on children's health in Mongolia, UNICEF

3/4

Three out of the four leading causes of death in Mongolia are related to air pollution.

(Institute for Health Metrics and Evaluation (IHME), GBD Compare Data Visualization, Seattle, WA: IHME, University of Washington, 2018)

FACTS ABOUT AIR POLLUTION

Air pollution has long been a headache for Mongolians. The fact that Ulaanbaatar is the coldest capital in the world, more than half of the population lives in the capital city, and coal and briquettes are the main source of heat for residents living in the ger districts makes Ulaanbaatar one of the cities in the world with the most air pollution. Let's take a look at the numbers to prove how much secondhand smoke affects our health:





It was found that the increase in air pollutants in the middle and last trimester of pregnancy reduced the birth weight of newborns by an average of 138 grams.

138gr

33.8%

33.8 percent of all citizens who died in the capital died from air pollution-related illnesses.

15x
21x

Acute bronchitis is 21 times more common in children under 5 years old than the average of other age groups, and pneumonia is 15 times more common.

SPH, MMU.S. 2017

GDP

3.1 In 2008-2016, more than 490 billion MNT was spent on air pollution reduction measures, equivalent to 3.1 percent of Mongolia's annual GDP.

875K

MNT The amount of money on average that an employee from a private company will lose due to air pollution-related illnesses in Ulaanbaatar.

SPH, MMU.S. 2017

LEADERSHIP FOR TRANSFORMATIONAL CHANGE



When I returned to Bayankhongor province after graduating from university in 2011, air and soil pollution had already become a problem. At that time, I didn't know what to do to stop or prevent it, but with time I gained a lot of experience working in the private sector and other public organizations with the aim of developing the community.

In 2019, I was elected to the Bayankhongor's Citizens Representative Assembly (Khural), and appointed as the Bayankhongor city Deputy Governor. That's when I started to work on the UNICEF-SDC financed Clean air initiative. For the last three years, we have been working to reduce the impact of air pollution on the health of mothers and children, and I am the secretary of the working group.

I want to reflect on energy efficient and affordable CHIP. The Bayankhongor city had 9,679 households when we started the implementation in 2019. Of these households, 68.6 percent or 6,639 lived in a traditional Mongolian ger. The Provincial Government saw the potential in CHIP and made it their goal to transition 20% of all ger households to use CHIP within the next four years.

As of today, the Provincial Government is halfway there – reaching 10 percent. But it wasn't easy at first – there were even some doubts. When it came to replacing the traditional coal-burning fireplace by a CHIP package, people were not accepting it due to its purchase price and increase in electricity costs from the heater.

Families who started using CHIP told me that it took some time to get used to. But, from the second year of having CHIP technology they were able to live comfortably once they got used to it. In the past, our children used to wait for an hour until the coal burned hot enough to warm the home. They used to sit with their coats on after coming from school and kindergarten. After solving this issue by using [CHIP], this problem was solved easily.

We are already seeing improved health of children in their community – finding that respiratory diseases have reduced significantly. More than a decade ago, the fine particulate matter PM 2.5 measuring device was placed outside the U.S. Embassy in Ulaanbaatar. Today there is one in our province, with the help of the SDC, UNICEF and Professor Jay Turner from WUSTL. Since then, we could calculate air pollution realistically in real time. With this, our provincial meteorology staff have learnt a lot through online and in person trainings. Surprisingly, our meteorologists have found a way to communicate with Prof. Jay Turner and his team on a daily basis using Google Translate and a Facebook group. So, global communication tools have let our people overcome language barriers and work closely on daily basis despite the distance." ■



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