

Table S1. Examples of the Municipal Programs with Sustainability Content in Murmansk and Magadan

CLEAN AIR, WATER, SOIL, HEALTHY HABITAT		
<p>Air, water, and soil are three fundamental natural resources. As critical elements for the survival of people and the planet, they are at the very core of sustainable development. Clean air, water, soil, healthy habitat programs aim to protect, maintain, and restore these essential natural resources. They reduce air pollution by implementing technological advancements in the industry, ensure water safety and improve water quality by constructing water and sanitation infrastructure, provide proper waste recycling to keep the soil free of pollution, etc.</p>		
city	Magadan	Murmansk
Name of the program/subprogram	“Clean Water”	Subprogram “Environmental Protection in Murmansk”, which is a part of the “Residential security and environmental protection” municipal program
Implementation period	2014-2021	2018-2024
Sustainability Issues	<p>99.1% of the population are connected to the centralized water supply system, 80% of the inhabitants are provided with the drinking water from ten springs on the Kamenushke River, two of which do not have any wastewater-treatment facilities.</p> <p>Poor water quality is, first and foremost, attributable to the lack of the wastewater treatment plants. Old water pipes also affect chemical and microbiological indicators of water.</p>	<p>Growth of waste generated by industrial production and consumption, caused by active usage of plastic and polyethylene packaging;</p> <p>Poor knowledge about ecological issues;</p> <p>Emergence of unauthorized landfills; lack of sorting system;</p> <p>Lack of systematic approach to protection, conservation and restoration of urban forests.</p>
Program Goal	To supply the population with drinking water that meets safety requirements established by the sanitary and epidemiological standards;	<p>To reduce negative impact on the environment by waste generated by production and consumption;</p> <p>To increase environmental awareness of the population.</p>
Key activities	<p>Modernization of water supply, wastewater and wastewater treatment facilities;</p> <p>Improvement of quality, reliability and energy efficiency of operation of water supply, wastewater and wastewater treatment facilities;</p> <p>Construction of treatment facilities and reconstruction of existing decontamination facilities.</p>	<p>Sewage treatment construction;</p> <p>Informing population about environmental protection;</p> <p>Increasing ecological knowledge of population;</p> <p>Other activities.</p>
Monitoring and assessment	<p>The proportion of culverts that need to be replaced;</p> <p>The proportion of water pipelines that need to be replaced;</p>	The amount of waste removed from Murmansk during program implementation period

	<p>The number of hydro-technical installations with the improved safety level;</p> <p>The number of watercourses that were provided with emergency prevention activities</p>	
<p>(2) STRONG LIVABLE NEIGHBORHOODS</p> <p>Healthy, sustainable and equitable neighborhoods assure quality of life for all residents providing easy access to education, medical care, shops, entertainment, various services and nature. Through these programs local authorities take the necessary actions to make houses, blocks and neighborhoods better places to live by solving the problem of lack of playgrounds, sports or amusement facilities; achieving sanitary norms or the safety requirements; increasing green areas; improving pedestrian roads.</p>		
City	Magadan	Murmansk
Name of the program/subprogram	«Upgrading the courtyards in The City of Magadan»	Subprogram “Building, accomplishment, repair and maintenance of public areas in Murmansk”
Implementation period	2017-2019	2018-2024
Sustainability issues	As noted in the definition	The quality of the neighborhoods depends on the livability of the territory, greening, and the number of small architectural items (like benches, litter bins) placed in the city.
Program goals	To provide and improve the comfort of living conditions of citizens.	To develop and improve Murmansk public areas with a focus on greening the city;
Key activities	<p>List of minimum tasks:</p> <p>Repair of courtyard driveways, providing sufficient illumination of the yard territories,</p> <p>Install benches and garbage bins.</p> <p>Additional tasks:</p> <p>Provide car parking;</p> <p>Provide sports- and playgrounds equipment; landscaping of the yard territory.</p>	<p>Creation of favorable conditions for recreation of city residents;</p> <p>Conducting sociological surveys on improving the appearance of the city.</p>
Monitoring and assessment	<p>4 indicators:</p> <p>A number of installed outdoor lighting devices;</p> <p>An area of asphalted traffic and pedestrian roads;</p>	Main indicator is share of repaired buildings from all buildings which need to be repaired

	A number of trees and shrubs planted; A number of children's playgrounds, architectural landscape elements and barriers installed.	
(3) EFFICIENT TRANSPORTATION SYSTEM		
A number of programs refer to efficient transportation. Most often, it is described as an accessible, affordable, safe and low-energy consuming transportation system. In the context of sustainable development, it should also provide social, economic and environmental benefits. Efficient Transportation System programs' main goal is to provide easy and reliable movement of goods and people from one location to another.		
City	Magadan	Murmansk
Name of the program/subprogram	"Improving and developing transport network in The City of Magadan"	Subprogram "Development of Transport Infrastructure"
Implementation period	2016-2018 (new one 2019-2023)	2018-2024
Sustainability issues	High accident rate due to high population mobility and significant imbalance between the number of cars and the capacity of the road network.	Due to the increase in traffic volume, the quality of roads in Murmansk does not always comply with the permissible condition for ensuring road safety
Program goals	To ensure the improvement and preservation of public roads of local importance and transport infrastructure facilities; to create conditions for the stable development of transport infrastructure in the City of Magadan.	To develop transportation infrastructure
Key activities	2 subprograms: on qualitative improvement to the public roads and contemplates old roads rehabilitation and new roads construction; on enhancing road safety. Major activities: "pedestrian crossing" signposting, building guardrails to keep pedestrians away from the roads, reconstructing traffic lights, placing speed humps, installing pedestrian "countdown" signals, setting outdoor lightning devices, retro-reflective road markings, installing fluorescent signs and reconstructing pedestrian walkways.	Key activity is repair of public roads
Monitoring and assessment	Annual decrease in the number of traffic accidents;	Share of repaired roads to all roads which need to be repaired

	<p>Annual decrease in the number of pedestrians injured in traffic accidents;</p> <p>The number of pedestrian crossings equipped with modern technical means of traffic management;</p> <p>The length of public roads (road construction);</p> <p>Public roads' compliance with the regulatory requirements;</p> <p>Public roads; km2 repaired.</p>	
<p>(4) DIVERSE LOCAL ECONOMY</p> <p>Diverse local Economy programs are intended to create long-term economic opportunities and employment for the local residents, leading to a stable, diverse economy of the city. More diverse local economies are more likely to launch a sustainable cycle of economic activities where businesses are growing gradually in line with economic growth supported by each other.</p>		
City	Magadan	Murmansk
Name of the program/subprogram	"Development of small and medium-sized businesses in The City of Magadan"	Subprogram "Development and support of small- and medium-sized businesses in Murmansk"
Implementation period	2017-2021	2018-2024
Sustainability issues	Further ensuring the sustainable development of small and mid-size enterprises (SMEs) will increase the number of employed people in this area by increasing the number of SMEs and enhance the contribution of SMEs to the gross municipal product.	Involvement of an economically active population in entrepreneurial activity contributes to the growth of welfare in society, ensuring socio-political stability, maintaining employment and increasing budget revenue.
Program goals	To create favorable conditions for the sustainable development of small and medium-sized enterprises in the City of Magadan.	To create favorable conditions for small- and medium-sized businesses
Key activities	<p>Support by local authorities: information support: publishing information required for the SMEs development on the local authorities' website, monitoring of informational publications on SMEs activities and support, conducting social surveys on the status and development of SMEs.</p> <p>Advisory support is intended to inform SMEs about the initiatives set out by the program, as well as about the participants and other parties involved, organization of conferences and seminars on entrepreneurship and SMEs.</p> <p>Property support offers small- and medium-sized entities an opportunity for possession and (or) use of property on a</p>	<p>Informational and advisory support for small and medium sized business;</p> <p>Financial support for existing and emergent businesses</p> <p>Business competitions, exhibitions, and fairs in the city</p>

	<p>reimbursable and non-reimbursable basis or on preferential terms in accordance with current legislation.</p> <p>Financial support comprises a set of measures to increase the available volume of credit resources for self-starting entrepreneurs to set up new ventures.</p>	
Monitoring and assessment	<p>The number of small and mid-size enterprises (SMEs);</p> <p>The number of workers engaged in SMEs;</p> <p>The number of SMEs that have received support under this program.</p>	The absolute number of new medium and small sized businesses, and the number of medium and small sized businesses per 10,000 people
<p>(5) ENERGY REDUCTION</p> <p>Energy production and consumption is directly connected with the level of greenhouse gas emissions. Energy conservation programs include programs, which are aimed to reduce the level of energy consumption, improve energy efficiency, increase renewable energy, etc. As energy reduction programs are diverse, they may be implemented comprehensively.</p>		
City	Magadan	Murmansk
Name of the program/subprogram	No municipal programs aimed at energy reduction were found in Magadan.	Subprogram "Energy saving and increasing energy efficiency in the territory of Murmansk"
Implementation period		2018-2024
Sustainability issues		Improving the energy efficiency of the Russian economy has become one of the priority tasks of the state policy, promulgated by the Presidential Decree
Program goals		To increase energy efficiency in the production, transmission, and consumption of energy resources and create conditions to transfer economy to an energy-saving path
Key activities		<p>Subprogram has two directions: energy saving and energy efficiency (1) in the municipal sector and (2) housing stock.</p> <p>In the municipal sector, key activities in 2018 - 2021 are: modernization of energy systems for the efficient use of energy resources, data collection and processing on the consumption of energy resources by municipal organizations.</p> <p>In housing stock key activities are: improvement of energy characteristics of housing stock, compensation of costs to resource-</p>

		supplying organizations for the installation of collective meters, updating Murmansk heat-supply scheme and others.
Monitoring and assessment		Share of energy resources measured by metering devices to the total amount of used energy resources
(6) CONNECTED, ENGAGED AND PARTICIPATORY COMMUNITY		
The goal to build a connected, engaged, participatory community is to facilitate citizens' involvement into policy-making and decisions which affect them, to make them aware about environmental issues and make them "act as stewards of the environment". Also, these programs are aimed at connecting people and raising their environmental responsibility at individual, community and the general levels.		
City	Magadan	Murmansk
Name of the program/subprogram	"Informing population on the activities of local government in the city of Magadan"	Subprogram "Support of public and civil initiatives in Murmansk"
Implementation period	2012-2019	2018-2024
Sustainability issues	Improving communication between the general public, public administration and mass media on local issues; Increasing the information openness and transparency in the authorities activities; Providing information on matters of social interest.	Supporting civil society
Program goals	To build an open information space that will allow Magadan citizens to access information on the local government activities and ensure their transparency and openness.	To develop civil society institutions, encourage citizens and organizations to participate in public associations, To support public and citizen's initiatives and patriotic education of citizens
Key activities	Informing citizens on the local government activities through the use of media, brochures, television, radio, Internet, etc	Activities, aimed to support public associations and non-profit organizations, Support active citizens of Murmansk, Increase the prestige of military services, Foster patriotism and civil engagement, and others
Monitoring and assessment	The number of printed publications covering the activities of local governments and the socio-economic development of the city (per 1,000 of the population); Broadcasting airtime given to programmes covering local authorities' activities; Time on air (radio) given to programmes covering local authorities' activities;	Share of public associations and non-profit organizations participating in public support and civic initiatives, of the total number of public organizations. Number of applications for socially significant projects

	Public satisfaction with the local authorities' activities and information transparency; The number of the official city-hall website visitors.	
(7) SAFE AND HEALTHY COMMUNITY		
Safe and Healthy community programs are aimed to increase public physical health, and also protect people from hazards, such as crime, fire and others. This program is especially important in Arctic regions, because they face harsh climate conditions, which affect people's health.		
City	Magadan	Murmansk
Name of the program/subprogram	"Safe City"	Subprogram "Development of healthy lifestyle of Murmansk citizens"
Implementation period	2014-2018	2018-2024
Sustainability issues	The threat of technogenic and transport emergency situations.	The program is aimed to reduce the prevalence of harmful habits among the population (alcohol abuse, smoking), and, ultimately, reduce morbidity and increase life expectancy of the Murmansk population
Program goals	To create conducive and secure environment in the territory of Magadan.	To create motivation for a healthy lifestyle of Murmansk citizens
Key activities	Creating a monitoring center to connect it to the installed within Magadan video surveillance equipment.	Reducing smoking, alcohol consumption and non-communicable diseases (such as circulatory system diseases, abuse, and diabetes)
Monitoring and assessment	The number of reported incidents in the streets and other public places; The number of surveillance cameras installed at public facilities; The number of surveillance cameras installed at educational facilities; The number of surveillance cameras installed at cultural institutions; The number of surveillance cameras installed at sport institutions.	The number of people who participated in activities aimed to lead a healthy lifestyle
(8) SOCIAL EQUITY; AFFORDABLE HOUSING AND POVERTY REDUCTION		
Devoted to affordable, quality housing. In the city of Whitehorse, its main goals are reduction of the number of households that spend more than 30% on shelter; reduction of income gap; and increase of programs that help low income families (Whitehorse website). Also, "accessible environment" part was added to this category, as there are programs in Magadan, which are aimed to help people with disabilities to be more mobile in the city environment.		
City	Magadan	Murmansk
Name of the program/subprogram	"Accessible environment"	Subprogram "Providing social assistance to orphans"

Implementation period	2014-2018	2018-2024
Sustainability issues		
Program goals	To create a barrier-free environment for the physically disabled people and people with limited mobility.	to reduce the number of orphans and children left without parental care
Key activities	Multiple actions that will allow people with disabilities to move around and use public spaces, such as installing handicap ramps and handicap parking spots as well as special signs and traffic lights with sound signal.	Subprogram suggests social assistance to orphans, such as free travel to the places of vacation, monthly payment for housing and communal services, repair of living quarters, and other. Takes care of guardians and foster families, by paying subvention for child's maintenance and remuneration
Monitoring and assessment	The proportion of facilities that have been provided with arrangements for people with disabilities; The share of residential properties equipped with wheelchair ramps of the total number of residential properties in Magadan; The number of individuals with disabilities engaging in cultural and physical exercise activities; The number of children with disabilities receiving special education.	The decrease in the number of orphans and children left without parental care Limiting the proportion of children left without parental care, getting additional measures of social support
(9) DYNAMIC AND DIVERSE CULTURE, HERITAGE AND ARTS these programs aim at supporting local culture and arts and increasing citizen participation in cultural events		
City	Magadan	Murmansk
Name of the program/subprogram	"The cultural development in the City of Magadan"	Subprogram "Maintenance of traditions and folk art and development of creative potential of city residents"
Implementation period	2015-2019	2018-2024
Sustainability issues	Poor economic performance of cultural institutions leading to the lack of young and creative professionals in the sphere of creative activity.	
Program goals	To create conditions for satisfying the demands of citizens for cultural activities.	To create favorable conditions for the development of culture and art, Ensure the rights of citizens to participate in the cultural life of the city, participate in the preservation, revival, and development of folk art, Support creativity and inform the Murmansk citizens about events in cultural and public life

Key activities	<p>Strengthening the material and technical resources ensuring that buildings are maintained in good working order, equipped with heat and energy systems and cultural institutions are endowed with special equipment.</p> <p>Increasing the involvement in cultural life of the city through an increase in the quantity and quality of events including supporting talented children and young people in developing their intellectual and creative potential. This program is aiming to solve the problem of lack of professionals in the creative industries.</p>	The subprogram stimulates activities aimed at preserving cultures, and developing cultural and leisure activities, attractive to different population groups
Monitoring and assessment	<p>The quantity and quality of events</p> <p>The number of talented children and young people supported in developing their intellectual and creative potential</p>	<p>The number of organized festivals, cultural and leisure activities</p> <p>The number of media informing about events in the cultural life of the city.</p> <p>Number of organizations, publishing houses, creative unions, cultural workers, social workers, and honorary citizens who received municipal support</p>
<p>(10) HUMAN CAPITAL INVESTMENT & ACCESSIBLE EDUCATION</p> <p>This category was added because Murmansk and Magadan pay significant attention to school education, and youth development programs</p>		
City	Magadan	Murmansk
Name of the program/subprogram	"The development of education system in the City of Magadan"	Subprogram "Modernization of educational system in Murmansk"
Implementation period	2015-2020	2018-2024
Sustainability issues	Poor level of performance of the educational system.	<p>Modernization of the educational system in Murmansk is important, as it may give better life opportunities for future generations and improve their wellbeing.</p> <p>The subprogram focuses both on giving equal opportunities to get education to all children living in Murmansk, and on improving the quality of this education.</p>
Program goals	To ensure quality, accessibility and effectiveness of education in the territory of Magadan taking into account current and prospective demands of individuals, society and state.	To create equal opportunities for children in kindergartens, primary and secondary education

<p>Key activities</p>	<p> Creating additional places for preschool children Increasing the number of educational organizations with advanced teaching and bringing them into line with modern conditions, Increasing the number of participants in school and student competitions, children pursuing additional education and municipal organizations conducting innovative activities, Providing educational organizations with highly qualified personnel and developing modern technological infrastructure of education </p>	<p> Building (reconstruction) of kindergartens, general and secondary education infrastructure, Improvement of educational facilities, technology, major repairs of kindergartens, primary and secondary education objects </p>
<p>Monitoring and assessment</p>	<p> The availability of qualified teachers; The availability of junior service personnel in schools; The number of young specialists involved in the field of education. </p>	<p>There are 21 main indicators for assessment of this program.</p>