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Urban Resilience and Adaptation for India and Mongolia:

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Labour market demands concerning urban green and blue infrastructure in Mongolia

An analytical overview

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This report has been based on the materials collected during the preparation of the proposals for the Erasmus+ CBHE project URGENT in September-December 2019. It has been further updated and refined by the working group of URGENT scholars as a part of URGENT project preparation activities under its work package 1.

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Introduction

The labor market demands concerning urban green and blue infrastructure in Mongolia are becoming increasingly relevant as the country experiences rapid urbanization and environmental challenges. Urban green infrastructure refers to the network of parks, gardens, trees, and other green spaces in cities, while blue infrastructure refers to bodies of water such as rivers, lakes, and wetlands.

Mongolia is experiencing a significant increase in its urban population, with almost 70% of the country's population expected to be living in cities by 2030. This rapid urbanization is leading to an increase in demand for urban green and blue infrastructure to provide residents with access to outdoor recreational spaces and to help mitigate the effects of climate change. The development of green and blue infrastructure also creates job opportunities in various sectors such as landscape architecture, horticulture, urban planning, and construction. There is a growing need for skilled workers who can design, implement, and maintain these urban green and blue spaces. Moreover, it is important to provide training and education to Mongolian workers in these fields to meet the growing demand and to ensure the sustainability of the urban green and blue infrastructure. This report provides an overview of the labor market needs concerning GBI in Mongolia.

This report has been based on the materials collected during the preparation of the proposals for the project URGENT in September-December 2019. The input data included the summaries of expert discussions (both stakeholder and academic), as well as structured interviews with key representatives of the world of profession. The outcomes of this preparatory study has been used for deciding on URGENT cross-cutting topics, and was further used as a reference document for suggesting new and revised disciplines for the URGENT curriculum development program in India. The report has been further updated and refined by the working group of URGENT scholars as a part of URGENT project preparation activities under its work package 1.

Challenges

Implementing and maintaining green and blue infrastructure can also present challenges for the labor market in Mongolia. Here are some of the key challenges related to labor markets:

Lack of skilled labor: Implementing and maintaining GBI requires specialized skills and knowledge, including landscape architecture, horticulture, and ecology. However, there may be a shortage of workers with these skills in Mongolia, which could limit the scale and effectiveness of GBI projects.

Limited funding: Implementing GBI can be expensive, and funding for such projects in Mongolia may be limited. This can make it difficult to attract skilled workers or to pay existing workers competitive wages.

Seasonal work: Some aspects of GBI maintenance, such as planting and pruning, may be seasonal. This can make it difficult to maintain a stable workforce throughout the year, which can lead to turnover and training costs.

Health and safety concerns: Working with GBI can pose health and safety risks, such as exposure to pesticides and physical strain from heavy lifting. Ensuring worker safety and providing appropriate protective equipment can add to the cost of GBI projects.

Limited awareness and education: Many Mongolians may not be aware of the benefits of GBI or the career opportunities available in this field. Increasing public awareness and providing education and training programs could help to build a larger pool of skilled GBI workers in Mongolia.

Overall, while urban green and blue infrastructure has the potential to provide numerous benefits to cities in Mongolia, addressing these labor market challenges will be critical for the successful implementation and maintenance of GBI projects.

Labor Market Needs for Green and Blue Infrastructure in terms of GBI management and policy areas

Meeting the specific needs of labour markets related to urban GBI in Mongolia requires a multi-faceted approach that addresses the social, economic, and environmental aspects of urban development. Some of the key areas that need to be addressed include:

Education and Training:

One of the most significant challenges in developing urban GBI in Mongolia is the lack of skilled professionals and technicians. The country needs a workforce that can design, implement, and maintain green and blue infrastructure in urban areas. Therefore, education and training programs must be established to meet this demand. These programs should focus on a range of skills, from landscape design and urban forestry to water management and ecology.

Community Engagement:

Community engagement is essential for the success of urban GBI projects. Communities must be involved in the planning, design, and maintenance of green and blue infrastructure in their neighborhoods. This involvement can help to ensure that the projects meet the needs and expectations of the residents, and that they are maintained and protected over the long-term.

Green Jobs Creation:

Investment in urban GBI can create new employment opportunities in a range of sectors, from landscaping and horticulture to water management and environmental education. These jobs can provide income opportunities for vulnerable groups, such as youth, women, and the unemployed. However, to achieve this, there is a need for policies and programs that support the development of green jobs in urban areas.

Private Sector Engagement:

The private sector can play a significant role in the development of urban GBI in Mongolia. Private companies can invest in green and blue infrastructure projects, provide financing for green businesses, and contribute to the development of green supply chains. Therefore, there is a need for policies that encourage private sector engagement in the development of urban GBI.

Research and Development:

There is a need for ongoing research and development in the field of urban GBI in Mongolia. Research can help to identify the most effective approaches for designing, implementing, and maintaining green and blue infrastructure in urban areas. It can also help to identify the economic and social benefits of urban GBI, which can be used to advocate for further investment in this area.

Policy and Planning:

Finally, policy and planning are critical for the development of urban GBI in Mongolia. Policies and plans must be developed that support the preservation and restoration of green and blue infrastructure in urban areas. These policies must also address the social needs that need to be identified and translated into planning objectives and management actions.

Labor Market Needs for Green Infrastructure in terms of the areas of expertise

Mongolia is a country with a rapidly growing urban population and increasing pressure on natural resources. The development of urban green infrastructure can offer multiple benefits, such as improving air quality, reducing urban heat island effects, enhancing biodiversity, and providing recreational opportunities. At the same time, the development of green infrastructure can create new jobs and economic opportunities for local communities.

In Mongolia, the development of urban green infrastructure is still in its early stages, but there are already some initiatives underway. One such initiative is the "Green Ulaanbaatar" program, which aims to increase the city's green space by 30% by 2025. This program includes the planting of trees and the development of green spaces such as parks, gardens, and green roofs.

The development of urban green infrastructure can create various job opportunities in Mongolia, such as:

- Landscape architects and designers: Professionals who design and plan urban green spaces, including parks, gardens, and green roofs.
- Horticulturists: Professionals who specialize in the cultivation of plants and the maintenance of green spaces.
- Construction workers: Skilled and unskilled workers who are involved in the construction of green infrastructure, including the installation of green roofs, the construction of green walls, and the creation of parks and gardens.
- Maintenance workers: Skilled and unskilled workers who are responsible for the upkeep and maintenance of urban green infrastructure, including pruning trees, watering plants, and cleaning parks and gardens.
- Ecotourism operators: Businesses that offer tours and recreational activities in urban green spaces, such as bird watching, hiking, and camping.
- Environmental educators: Professionals who provide education and outreach about the benefits of urban green infrastructure and how to care for it.

The development of urban green infrastructure in Mongolia has the potential to create new jobs and economic opportunities while also improving the health and wellbeing of urban residents and protecting the environment.

Labor Market Needs for Blue Infrastructure in terms of the areas of expertise

Blue infrastructure refers to the network of water resources in and around urban areas, including rivers, lakes, wetlands, and other bodies of water. In Mongolia, blue infrastructure plays a vital role in supporting both urban and rural livelihoods, as it provides water for drinking, irrigation, and livestock. It also supports the tourism industry, which is an important source of income for the country.

The management of blue infrastructure in Mongolia presents a range of challenges, including water pollution, land-use changes, and the degradation of water quality due to the extraction of minerals. To address these challenges, there is a growing need for skilled professionals who can develop and implement sustainable management practices for blue infrastructure.

The demand for labor in this sector is likely to increase in the coming years, as Mongolia continues to urbanize and as the government invests in infrastructure development. Some of the job opportunities related to blue infrastructure in Mongolia may include:

- **Water resource engineers:** Professionals with expertise in designing, building, and maintaining water infrastructure systems such as dams, canals, and reservoirs.
- **Water quality experts:** Professionals with knowledge of water treatment technologies and water quality monitoring, who can help ensure that water resources are safe for human consumption and ecosystem health.
- **Ecologists:** Professionals who can assess the impact of urbanization and infrastructure development on ecosystems and help develop sustainable management practices.
- **Environmental consultants:** Professionals who can assess the environmental impact of infrastructure projects and provide recommendations for mitigating negative impacts.
- **Tour guides and operators:** Individuals with knowledge of local blue infrastructure and tourism opportunities who can guide tourists and help support the tourism industry.

The management of blue infrastructure in Mongolia presents a range of challenges and opportunities for skilled professionals. As the country continues to develop, there will likely be an increasing demand for labor in this sector, creating new job opportunities for those with relevant skills and experience.

Conclusions

After examining the current situation in Mongolia, it is clear that there is a growing demand for skilled labor in the field of urban green and blue infrastructure. This demand is being driven by a number of factors, including increased awareness of the importance of environmental sustainability, the need for infrastructure to support urban growth, and the desire to improve public health and well-being.

One of the main areas of demand is in the field of landscape architecture and design. As urban areas in Mongolia continue to expand, there is a growing need for professionals who can design and implement green and blue infrastructure projects that are sustainable, functional, and aesthetically pleasing. This includes the development of parks, green spaces, and water management systems, as well as the integration of natural elements into urban design.

In addition to landscape architecture and design, there is also a demand for skilled workers in areas such as horticulture, arboriculture, and hydrology. These workers play a vital role in the maintenance and upkeep of green and blue infrastructure, ensuring that these systems continue to function effectively over time.

Overall, it is clear that the demand for skilled labor in the field of urban green and blue infrastructure is set to continue growing in Mongolia. This presents a significant opportunity for individuals with the right skills and qualifications, as well as for educational institutions and training providers who can help to develop the next generation of professionals in this field. Erasmus+ CBHE project URGENT is therefore coming right in time to support the societal needs and labor market demands.

The report further confirms the relevance of URGENT cross-cutting themes originally suggested, discussed and elaborated on the preparatory stage of the project:

- Urban forestry,
- Landscape architecture and phytodesign,
- Urban permaculture,
- Integrative smart green & blue urban planning,
- Observation,
- Information, and communication.