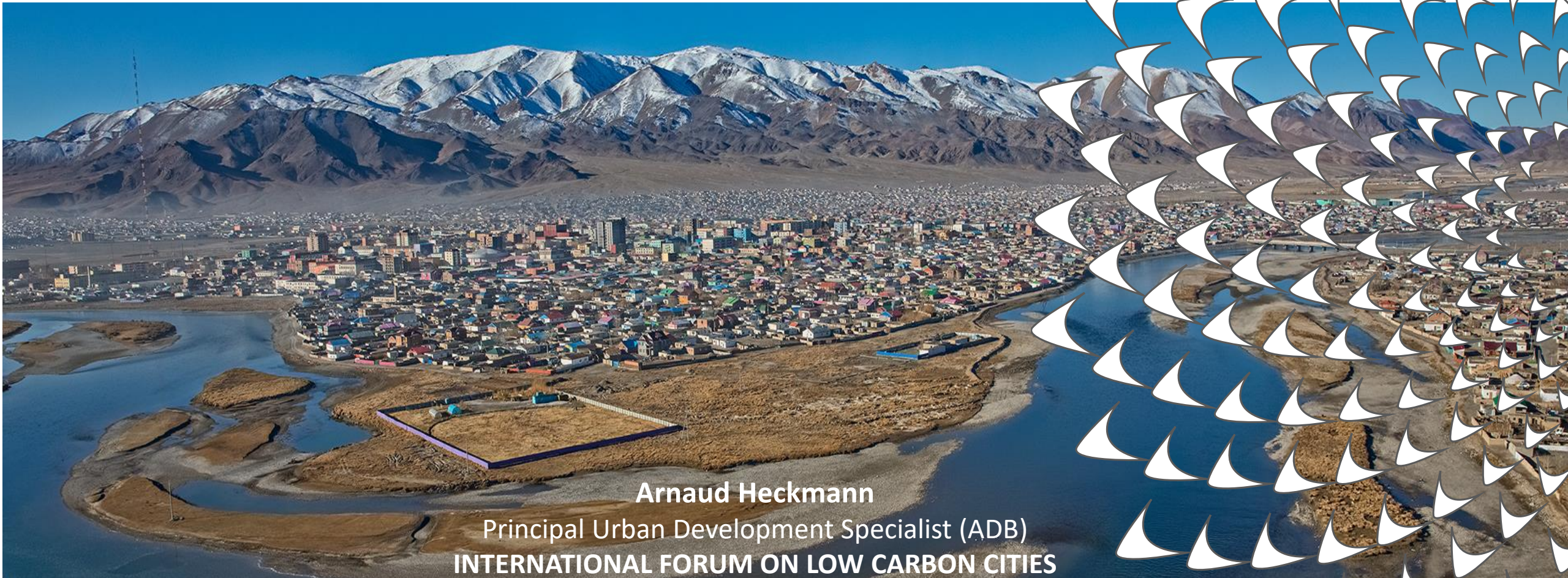




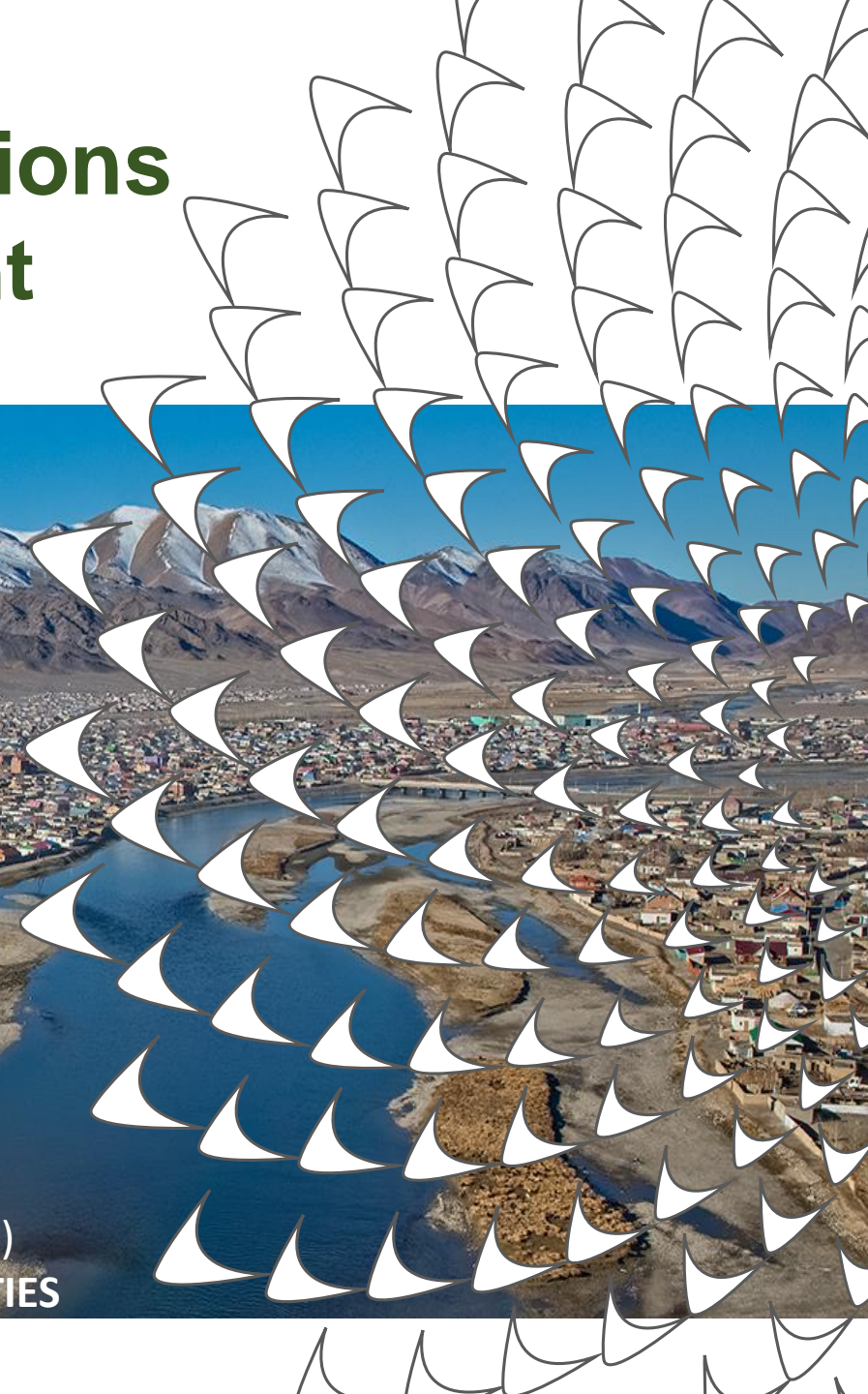
Integrated and Transformative Approaches and Financing Solutions for Low Carbon City Development

– The Example Urban Projects in Mongolia



Arnaud Heckmann
Principal Urban Development Specialist (ADB)
INTERNATIONAL FORUM ON LOW CARBON CITIES

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The Urban Challenge

ADB estimated that Asia and the Pacific Region need to invest about **\$26 trillion** during 2016–2030 for infrastructure to achieve the goals set out by the Paris Agreement and Nationally Determined Contributions (NDC)— the majority is expected to be invested in cities.

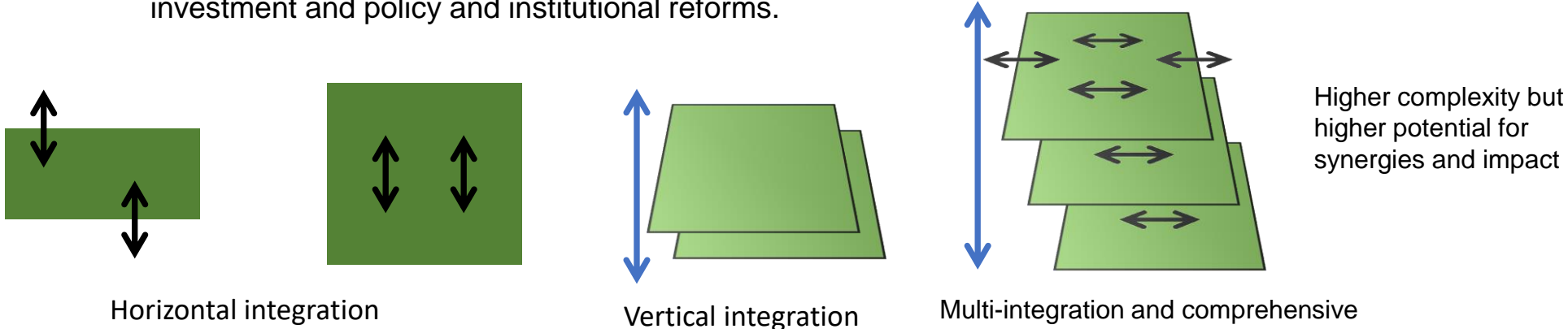
- Financing capacity of Governments, Municipalities and development partners is not enough
- Individual investments is not the solution, interventions need to be catalytic to promote transformative changes
- Barriers towards green investments should be eliminated, and investments, technology and solutions must be sustainable and replicable
- Governments' capacity and demand have changed. They are more and more looking for development and climate solutions rather than stand-alone investments; and for less projects but with bigger scale

Transformative Approach

- Transformation induce a change in paradigm and a reorientation of a development strategy. It introduce a systemic, structural, institutional transformation based on a vision, strategic objectives, and interdependent initiatives.
- Differ from incremental changes to and reforms of existing systems where change represent discrete, well-defined shifts.
- It require an overall transition for which a set blueprint to follow might not exist and delivering the capabilities for transformation.
- Transformations are only fully achieved when the new system and its disruptive innovations have been scaled-up to become the mainstream or become the dominant system, and are sufficiently resilient to maintain that position

Integrated Approach

- Combine different level of horizontal and vertical integration, together with cross sectoral approach built on development strategic objectives and visions and combining multisector infrastructure investment and policy and institutional reforms.



Large-Scale Approach

- Size is a quantitative dimension, but scale suggests complex interrelations involving socioeconomic and institutional impacts.
- Large-scale urban operations tend to stimulate other urban processes, involve many stakeholders, and have significant impacts for the cities or communities. They tend to better overcome certain systemic, structural, planning or capacity barriers, and can be presented instruments for planning as a kind of intermediate-scale planning.

Key Solutions and Mechanisms

- Importance of strategic development phase using in-depth climate and development assessment
- Use holistic framework to appraise climate and development problems and formulate multi-sector and pluri-disciplinary approaches;
- Focus on climate and development strategies, mechanisms and finance solutions rather than infrastructure investments;
- Elaborate public, private, people solutions to leverage private sector investments and promote community participation; and
- Develop strong partnerships and long-term programs that align create synergies between government, development partners, civil society, and private sector initiatives.

Mongolia Main Urban Issues and Vision Statements

Key urban issues:

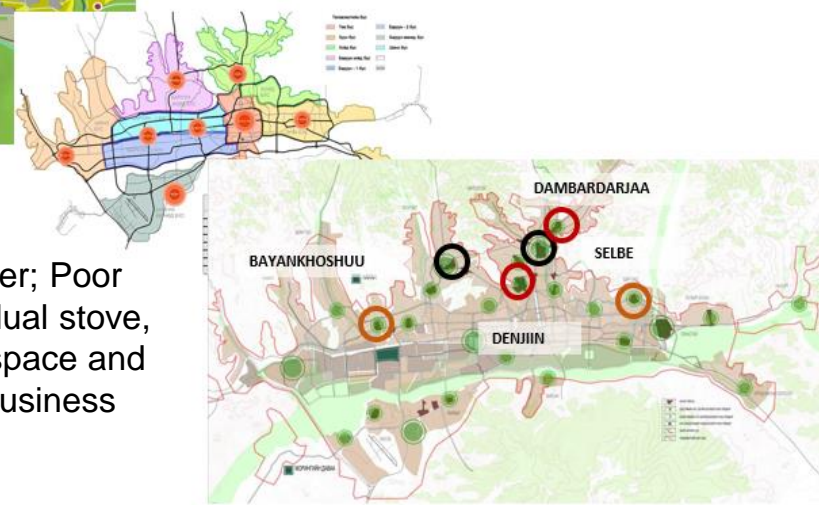
1. Sub-standard, underserved, highly emitting and polluting Ulaanbaatar peri-urban *ger* areas, where live 60% (or 860,000 people) of Ulaanbaatar population.
2. Unattractive, lagging-behind, and polluted human settlements or secondary cities, not connected with their territory that do not support green urban rural linkages.

Vision statements:

1. Transform *ger* areas into green, livable, inclusive, and performant urban areas that provides job opportunities and green affordable housings.
2. Link sustainable green urban development, low-carbon and resilient rangeland management, and climate-smart agribusiness value chain support into an overall green and resilient agro-territorial development framework.

Transforming Ulaanbaatar Substandard Peri-Urban Areas

Ulaanbaatar: 1.5 million population (Mongolia: 3.3 million)
Ger areas: 870,000 population; 60% of the City; 26% of the country



Substandard peri-urban areas

Open pit latrines; Limited access to water; Poor drainage, Dirt roads, Coal fueled individual stove, Poor insulation system, Lack of public space and facilities; No affordable housing; Poor business opportunities.

High level of congestion

Over centralization of services: emitting and polluting transport system.

- ▶ High level of emission, vulnerable to climate change, and polluting
- ▶ On-going growth (migration + natural growth) due to lack of infrastructure, and affordable housing alternatives



THREE STEPS APPROACH

- 1- Master Plan level strategy
- 2- Strategic extension of main truck infrastructure, and basic urban and social services
- 3- Affordable housing and Eco-district solutions

A Dramatic Pollution Level



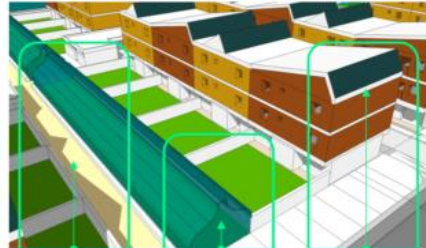
Air Pollution
one of the worst in the world

+

Soil Pollution
underground contamination

Severe Health Impact

A Eco-District Development



Pedestrian Cycle Lanes
Promoting an ecological mobility mode

+

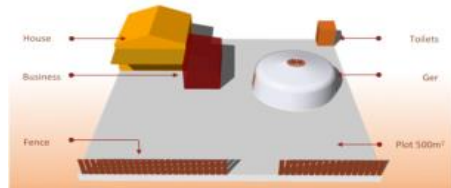
Community Gardens
Dedicated to residents
Greenhouses conceivable

+

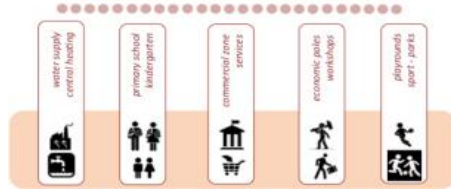
PV Solar Panels
If possible
Part of the power consumption

Take Part to Pollution Reducing

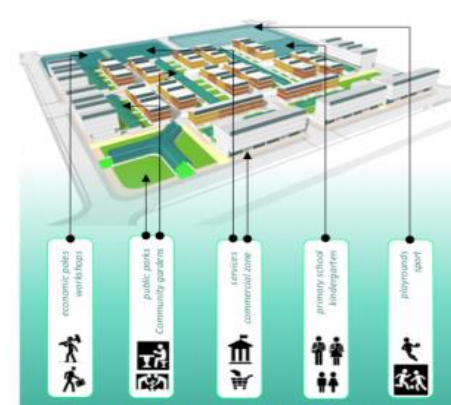
B Serious Under-Equipment



Faraway From
Facilities & Services



B Standard Equipment Level



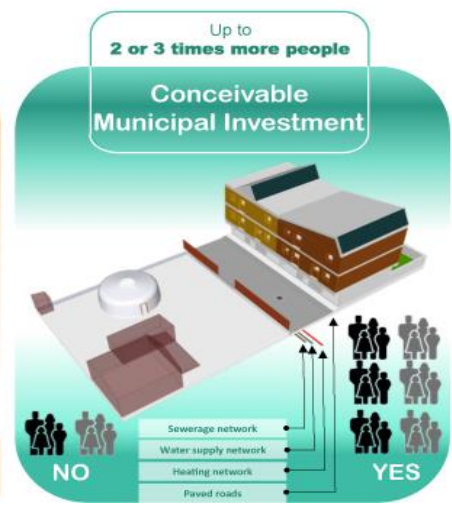
From 4 hectares (200mx200m)
A Balanced Mixed Use Urban Development

C Unaffordable Development

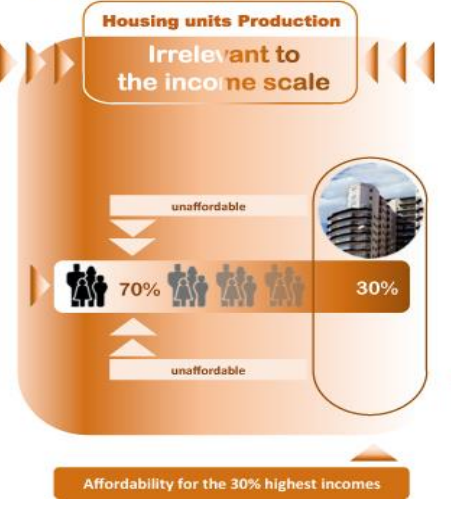


Because 70 years municipal budget to bring infrastructure in gar areas
Densification Required

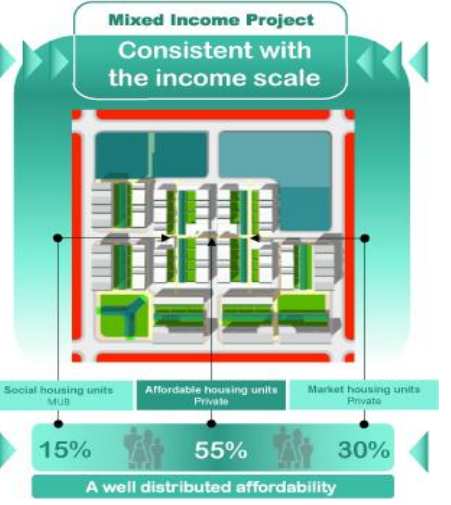
C Urban Facilities on Site



D Inadequate Housing Offer



D Suitable Housing Offer



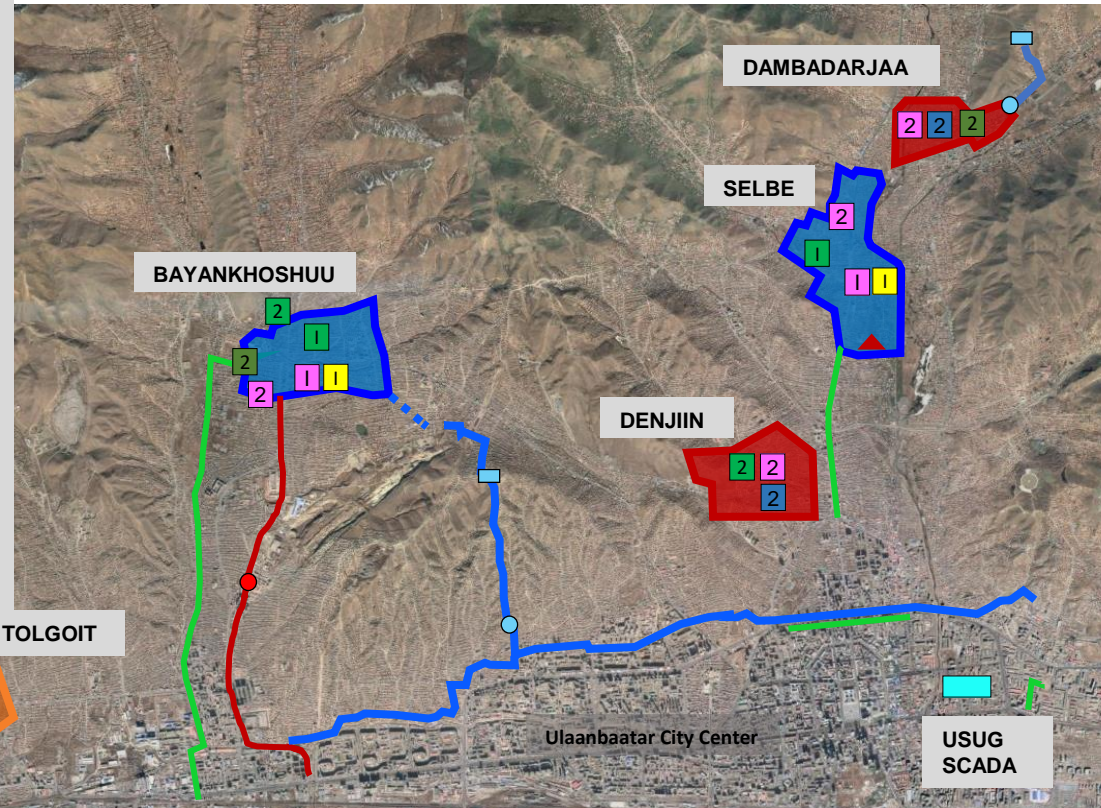
ULAANBAATAR URBAN SERVICES AND GER AREAS DEVELOPMENT INVESTMENT PROGRAM – Multitranche Financing: 3 Tranches

Tranche 1:
Bayankhoshuu and Selbe Subcenters

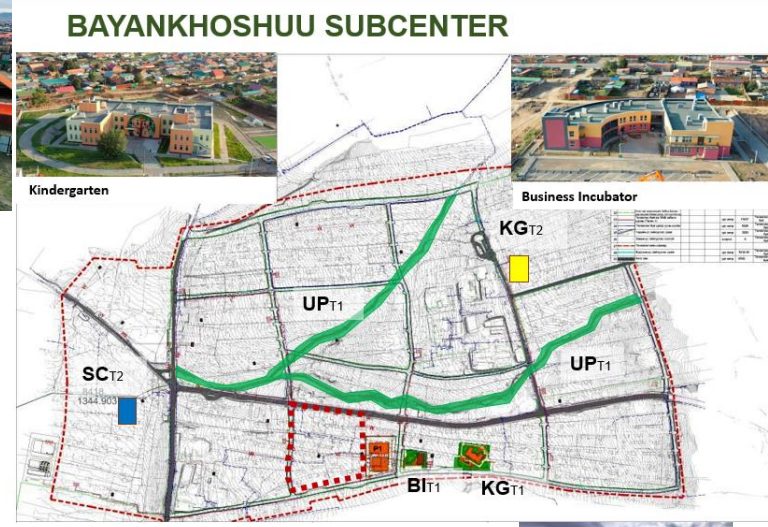
Tranche 2:
Denjiin and Dambadarjaa + Tranche 1 Subcenters

Tranche 3:
Tolgoit and Sharkhad Subcenters

- Business incubator
- Kindergarten
- Urban Park
- Sport complex
- Community center
- Shelter for victims of domestic violence
- ▲ Heating plant
- Water reservoir
- Pumping station



- Priority Infrastructure
- Socio-economic facilities
- Block Development/Densification
- Community participation
- Subcenter business and redevelopment plans
- Improvement USUG operation and CWWTP rehabilitation



Integrated Urban Infrastructure:
Roads, water and wastewater networks, heating system, drainage, bridges, power, telecommunication, street lighting

Social Facilities:
BI = Business Incubator
KG = Kindergarten
UP = Urban Park
SC = Sport Complex

T1 = TRANCHE 1
T2 = TRANCHE 2
■ Green Affordable housing core subproject



Investment Program	\$ million
ADB	163.7
MUB	96.0
EIB	60.3
Total program	320.0

Infrastructure where growth potential is high, to encourage densification, and initiate a change in the urban fabric
Compact, low carbon and resilient development
Upgrade of 6 Subcenters as the backbone of peri-urban developments to unlock economic potential

ULAANBAATAR GREEN AFFORDABLE HOUSING AND RESILIENT URBAN RENEWAL SECTOR PROJECT

Large scale demonstration project and complete solution, leveraging private sector investment, to deliver affordable and green housing stock, and establish policies, mechanisms, and standards for sustainable affordable housing and green urban development.

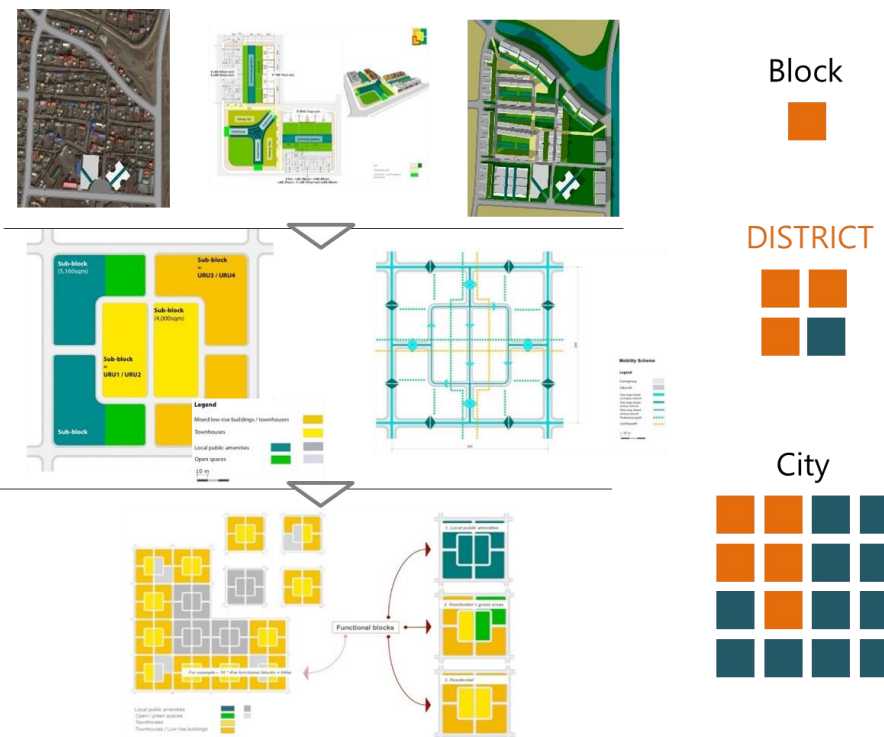
10,000 housing units (55% affordable, 15% social, and 30% market rate units) and redevelop **100 hectares** of *ger* areas into **eco-districts** that are:

- (i) Low-Carbon and Resilient
- (ii) Efficient and Integrated mixed-use with ample public space and public facilities,
- (iii) Inclusive mixed-income with at least 65% of combined affordable and social housing units,
- (iv) Improve the regulatory and enforcement framework for climate responsive urban planning, green building, and affordable housing.

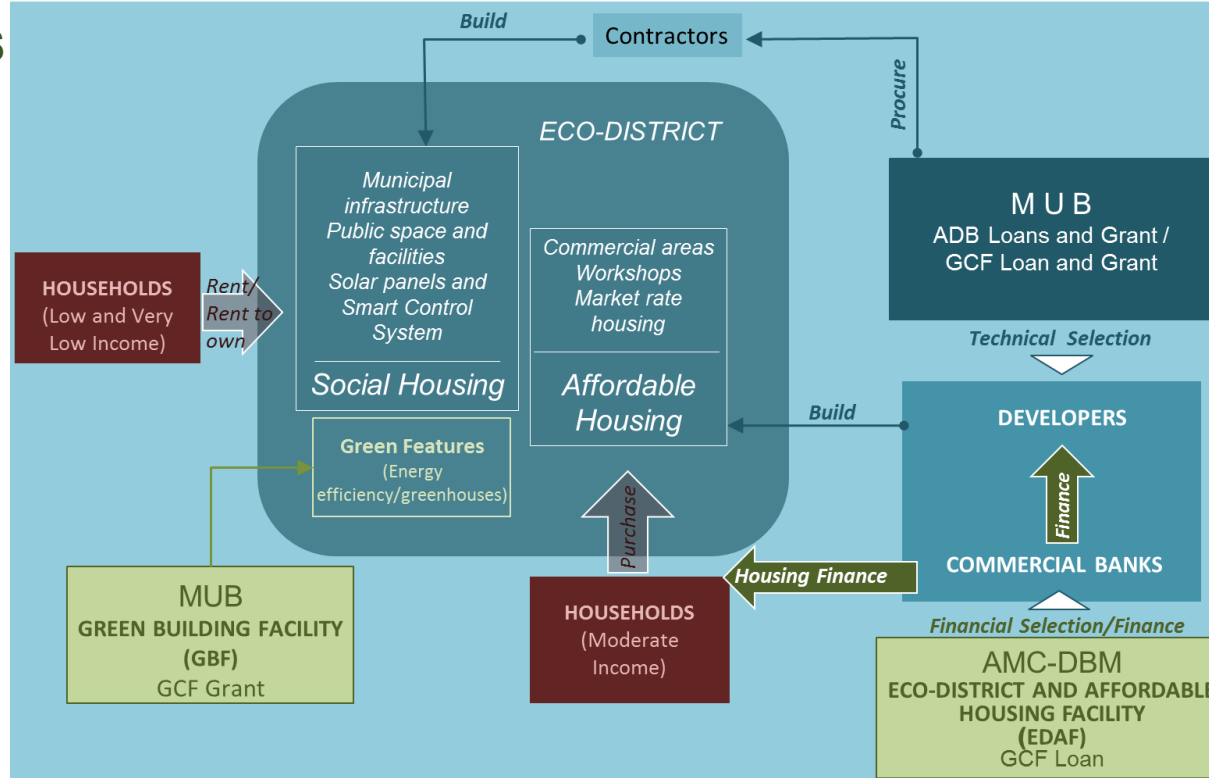


ECO-DISTRICT

Integrated planning and development process, and **complete solution** at the neighborhood level to build up **citywide sustainability and green development**



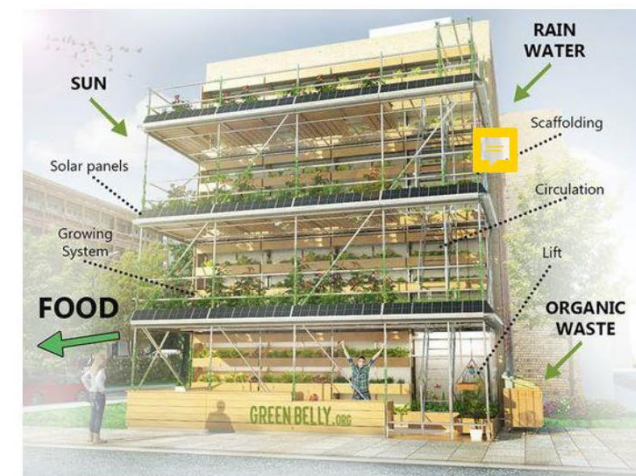
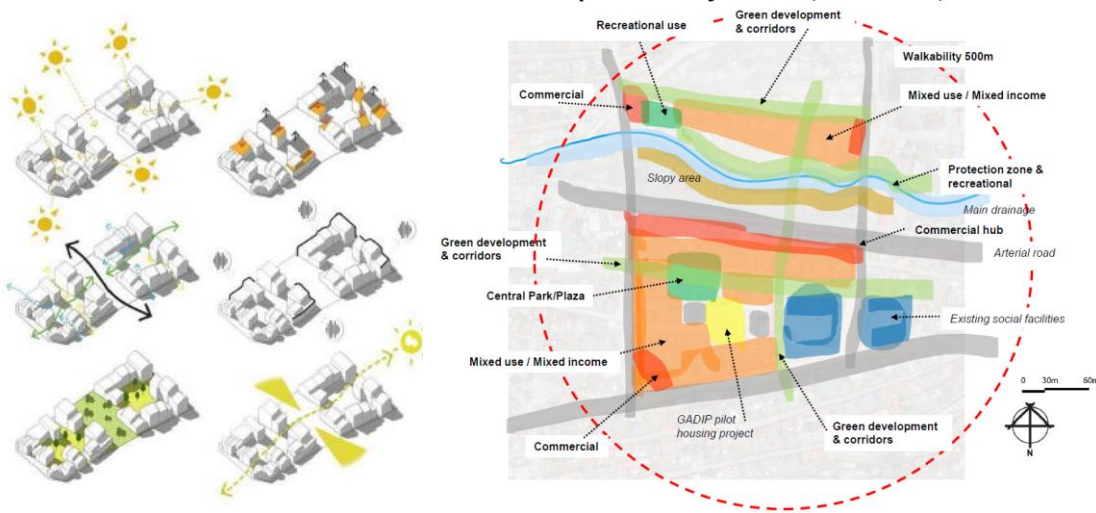
KEY FEATURES AND MECHANISMS



Source	Amount (USD million)
Asian Development Bank	80.0
Green Climate Fund	145.0
GCF (grant)	50.0
GCF (concessional loan)	95.0
HLT Fund (grant)	3.0
Commercial banks/DBM	111.4
Developers	131.8
Beneficiaries	63.9
Municipality of Ulaanbaatar	35.0
Total	570.1

- **Innovative PPPP (Public Private People Partnership):** Financial, and institutional integrated mechanism using financing support to developers for low-carbon affordable housing, market rate housing, and economic facilities in ger areas, and to households for green mortgages, with revolving mechanism, to deliver eco-district solution and leverage \$307.1 million from private financing commercial banks, developers and beneficiaries.
- **Green Building facility:** Performance-based grants to qualified private developers for climate change mitigation and adaptation features.
- **Effective community participation:** (a) community participation, social, and gender action plans including skills training and livelihood improvement opportunities; and (b) community-based urban farming and solid waste management.
- **Voluntary Land Swapping Mechanism:** that will provide housing solution to all residents for in situs redevelopment and through which the ger area population can move up to more climate resilient, low carbon, modern apartment buildings.
- **Innovative design and planning** to maximize **resource efficiency**, social cohesion, and economic opportunities; and promote **renewable energy** in buildings and smart renewable energy and building performance monitoring system.
- **Sector Loan** promoting policy reforms and institutional strengthening

GREEN AND ENERGY EFFICIENT DESIGN



Climate Impact and Benefits

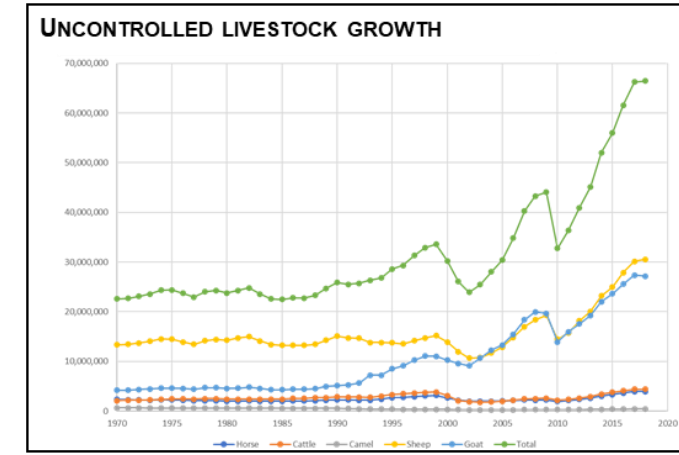
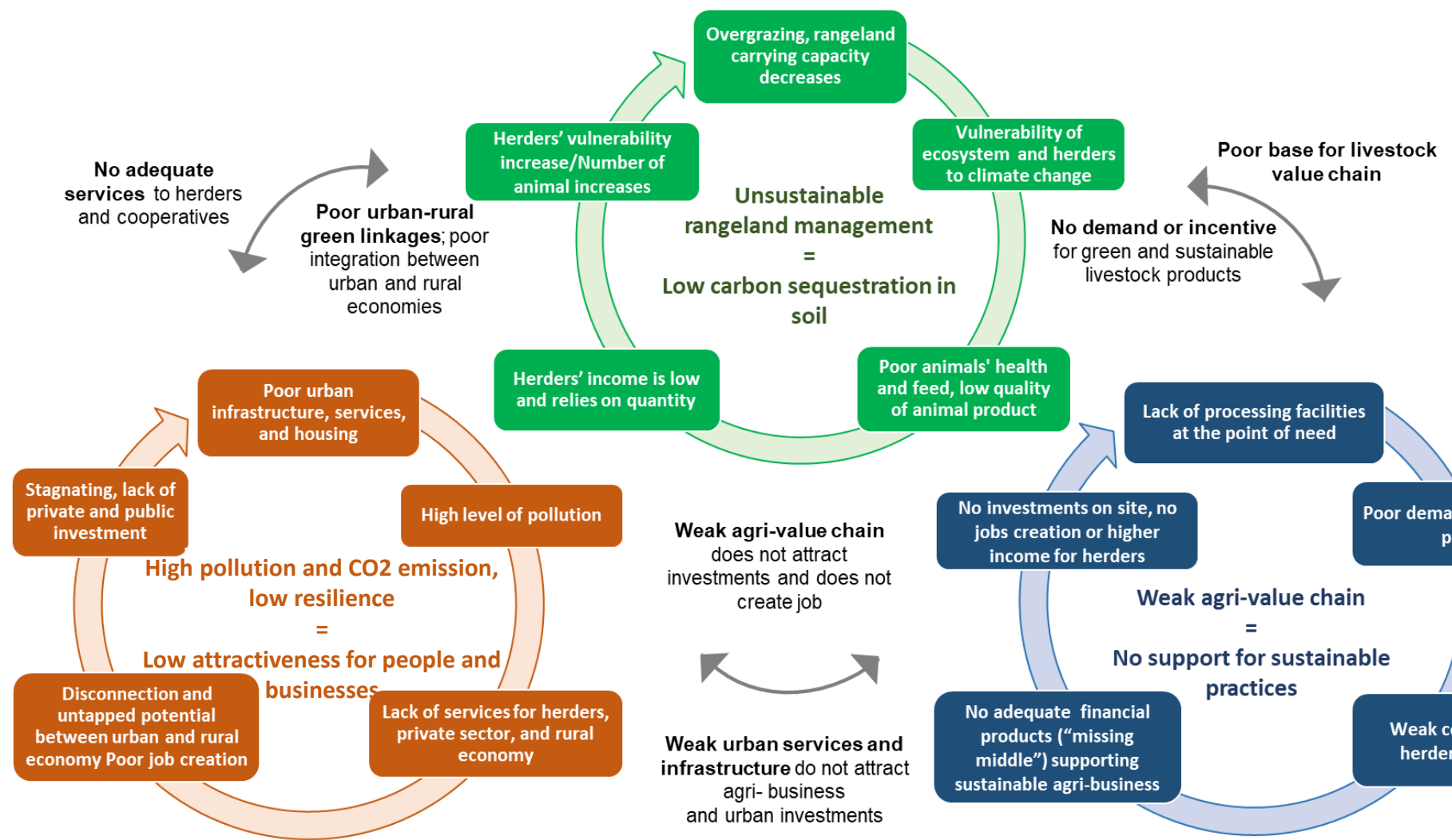
Transformational impacts: Policies and capacity building conducive to energy efficiency in buildings (EDGE Standard, urban planning, green building code); efficient supply chains for renewable energy systems; energy efficient construction technics and materials; green banking policies; and climate responsive urban planning.

Climate change cross cutting impacts

Mitigation: GHG emission reductions, Direct: 8 million tCO₂e and Total (including indirect – replications effect): 39.59 million tCO₂e.

Adaptation: 100,000 total direct beneficiaries and 1,000,000 total direct and indirect beneficiaries from reduced climate change vulnerability;

URBAN-RURAL INTERRELATED VICIOUS CIRCLES



Solving Sustainably and Efficiently Rangeland Degradation Means Solving a Set of Interrelated Issues
► Integrated and Comprehensive Geographic Approach - Green Territorial Development

Four transformative integrated interventions need to occur

1- Revival of aimag and soum centers into low-carbon climate-resilient urban settlements by improving the living condition and performance of priority urban settlements as anchors for population and local economic development, to attract LCLVC investments at the point-of-need and reconnect urban and rural economies.

2- Sustainable, low-carbon, and climate-resilient rangeland management practices, by promoting better rangeland management practices, grassroots organization, and transitional support for herders, to support more productive and quality animals that do not exceed their carrying capacity, reverse ecosystem degradation to increase the capacity for carbon sequestration and enhance rangeland and herder communities' resilience to climate change

3- Innovative climate finance attractive for green agribusinesses investment, by making more accessible and responsive financial and non-financial support to herders and SMEs operating in the *aimag* and *inter-soum* centers as well as the downstream and upstream segments of the value chain.

4- Build capacities and awareness, and support policy reforms to formulate and implement transformational low-carbon climate-resilient development plans and policy, knowledge, and MRV system.

Vision: Transformative model to promote **green territorial development and green urban-rural linkages** in Aimags, where livable human settlements become anchors of green agribusinesses that promotes resilient, sustainable and high carbon sequestration rangeland management.

Investment Program: Aimags and Soums Green Regional Development

Comprising 3 Tranches over 10 years implementation
Initial focus on Mongolia's western aimags, with replication and synergetic mechanisms for the entire country



2. Rangeland health, carbon sequestration and resilience is improved, and support herders to produce healthier livestock, quality animal-based raw material, and have higher income

(i) Implementation of community-based low-carbon and climate-resilient investments; (ii) support to low-carbon and climate-resilient PUGs and cooperatives; (iii) implementation of water-efficient irrigation systems for fodder production; (iv) traceability and certification systems; and (v) improvement of animal health.

Program Outputs

1. Targeted aimags and soums centers become more resilient, offer better living conditions, and support the development of green and inclusive agribusiness value chain

(i) Low-carbon and climate-resilient infrastructure, services, and agri-business parks in *aimag* centers and inter-*soum* centers; (ii) Affordable housing; and (iii) smart land management and climate responsive digital system

4. Capacity building and policy reforms for low-carbon and climate-resilient agro-territorial development improved

3. [FI component] Agribusiness value chain is inclusive, support sustainable rangeland management, performant and access to financing and credit risk guarantee for agri-business companies and agri-cooperative is extended

(i) Provision of accessible low-carbon and climate-resilient agribusiness loans and credit guarantees to qualified herders' cooperatives and SMEs; and (ii) provision of innovation grants for low-carbon and climate-resilient livestock value chains to qualified herders and SMEs.

Integrated Urban and Rural Parallel Initiatives

Integrated Urban Approach

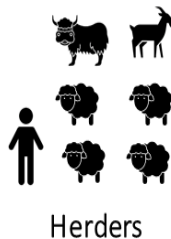
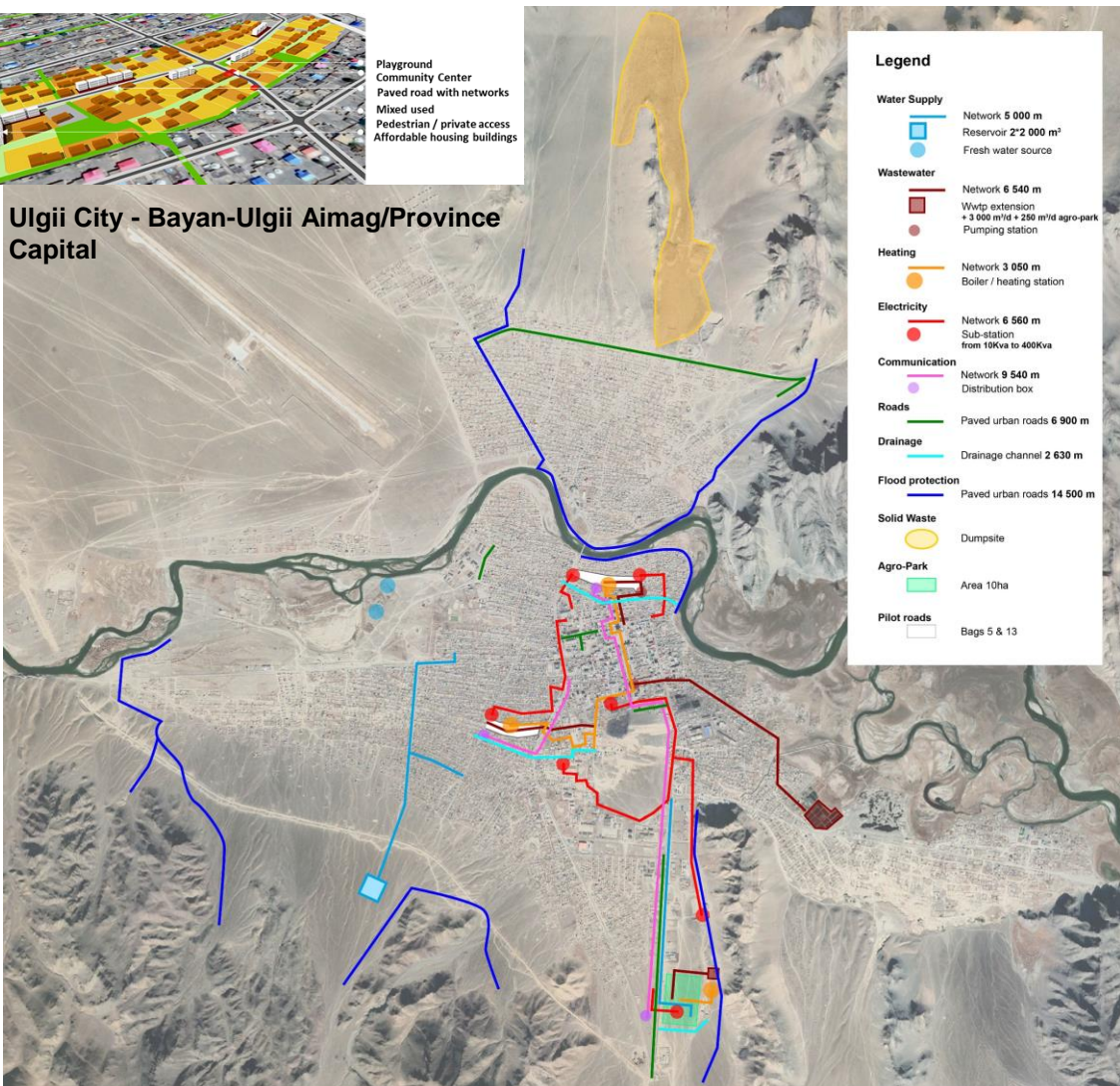
Sustainable Rangeland Management

Ger areas street development pilot



- Playground
- Community Center
- Paved road with networks
- Mixed used
- Pedestrian / private access
- Affordable housing buildings

Ulgii City - Bayan-Ulgii Aimag/Province Capital



SIGN & IMPLEMENT



Managed at PUG level

RUA = monitoring tool for sustainable rangeland management

- Rangeland use maps
- Stocking adjustment plans: targets for reduction in livestock numbers to match with carrying capacity
- Tailored targets for changes in livestock composition

GET ACCESS TO

COMMUNITY-BASED INVESTMENTS

Managed at PUG level

BENEFIT FROM HERDER COOPERATIVES & SMEs

Supported by ASDIP

Increased revenues for herders if RUA targets are reached with annual monitoring & evaluation

New economic opportunities & increased revenues

- New agribusinesses
- Certification on low carbon products
- Increased herd value added



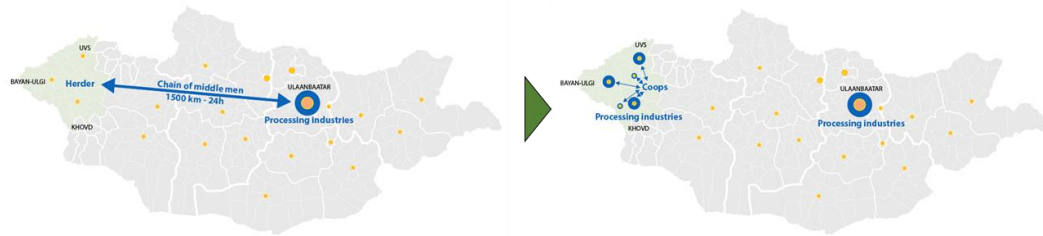
GIRAF Fund Structure and Management

The GREEN INCLUSIVE REGIONAL AGRIBUSINESS FUND (GIRAF) - about \$91 million – will address the financing constraints preventing agriculture cooperatives and agribusiness SMEs from capturing the full benefits of a well-functioning, inclusive, low-carbon and climate-resilient agribusiness value chain.



Current Situation

With ASDIP



Ministry of Finance

1 Equity Investment from GCF Loan Proceeds through MOF

2 To be managed by the Asset Management Corporation (AMC) of DBM

Green Inclusive Regional Agribusiness Fund (GIRAF)

To be piloted during Project 1 and potentially expanded in Project 2

Lending Window 1 Channeled thru Commercial Banks

Lending Window 2 Direct Financing by AMC-DBM jointly with other banks and financiers

Credit Enhancement Facilities: Credit Guaranty Facility Innovation Grants Facility

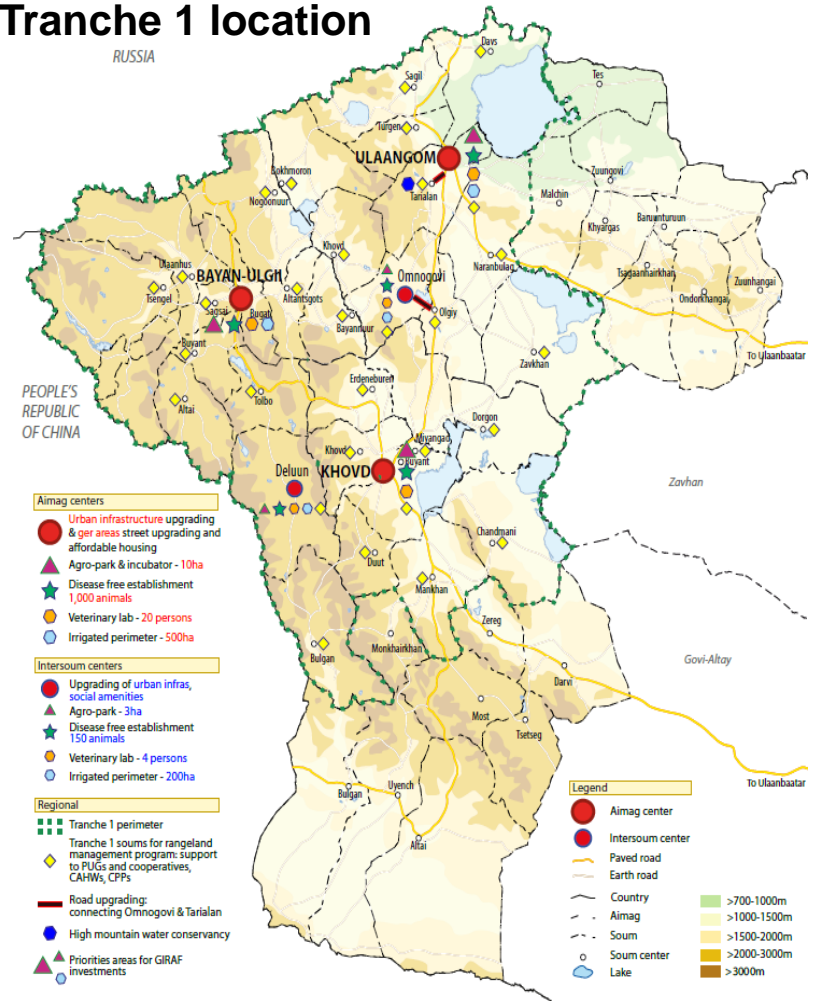
Lending Window 3 Channeled thru SCCs and other NBFIs



Aimags and Soums Green Regional Development Investment Program

Investment Program comprising 3 Tranches over 10 years implementation.
 Total investment, \$735 million (Tranche 1 \$273 million), co-financed by EIB, EU, and GCF, and leveraging Private sector investment

Tranche 1 location



Tentative financing plan-\$ million	
Total: 735 (273 tranche 1)	
ADB ordinary capital	270 (90)
ADB grant	3 (3)
GCF grant	45 (25)
GCF loan	130 (50.2)
EU grant	30 (10.5)
EIB loan	150 (52.9)
DBM/commercial bank/private equity	25 (14.3)
Gov of Mongolia equity	75.3 (20.7)
Beneficiaries equity	6.7 (3.4)

Prepared with the support of Japan Fund for Poverty Reduction

Implementation Strategy

Integrated institutional structure for implementation under one PIU that includes MCUD, MOFALI, DBM/AMC DBM, Aimag and Soum governments.

Multi-tranche phased implementation: Each tranche builds up on the outputs and successes of preceding tranches and complements earlier efforts made to provide a demonstrable model with replicability mechanisms that built on development partners complementary initiatives:

First: Tranche 1 will target Uvs, Khovd, and Bayan-Ulgii aimags, to create the integrated model

Second: Tranches 2 and 3 will (i) complement and complete Tranche 1 investments; (ii) implement integrated territorial development model based on selection criteria and pre-conditions in the rest of Mongolia.

- **Replicability mechanisms integrated in the implementation arrangements.**
- Synergies with complementary initiatives: UNDP, EU, WB, ADB, EU and Government

Synergetic Environmental, Economic, Social and Climate Benefits

- (i) **Decrease urban pollution, vulnerability, and CO₂ emission**, increase the attractiveness of urban areas and promote green urban rural linkages
- (ii) **Green economic diversification and post COVID-19 green recovery** fostering vibrant green local development, reverse the rural out-migration to Ulaanbaatar
- (iii) **Increase carbon stocks in rangelands** (above- and below ground biomass) and **ecosystem resilience** in particular rangelands in the context of climate change
- (i) **Promote sustainable and equitable management of natural capital and ecosystem services**, reverse rangeland degradation and improve herders' resilience.



- **Climate mitigation impact:** 117.40 million tCO₂e, including 94.0 million tCO₂e from carbon sequestered in the soil (potential for **440 million tCO₂e** **countrywide** over a 20 years period)
- **Ecosystem restoration:** Regeneration of **28.8 million ha** of rangeland
- **Main socioeconomic benefit:** **11,400 green direct jobs** and 150,000 indirect jobs created
-
- **Adaptation beneficiaries:** **550,000 people**, incl 54,000 vulnerable herder households.

