



BUMBYN TOGOL

Four-Season Eco-Park & Green Infrastructure Complex

INVESTMENT PROJECT SUMMARY

Enger Shand, 1st Khoroo, Nalaikh District, Ulaanbaatar, Mongolia

Project Title:	"BUMBYN TOGOL" (Bumba Paradise Grove)
Project Duration Years:	9
Current Stage:	Full Feasibility
Financing Type:	Requested Blended Finance
Co-financing Source:	The Governor's Office of Nalaikh District
Organization Type:	NGO
Registration Number:	6910874
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Strategic focus:	Nature-based Solutions for Sustainable Infrastructure Initiative
Executive Director:	Oyun-Erdene B.

30 ha Total site	21 ha Green infrastructure	20,000+ Trees & shrubs	USD 18.0M Total investment	9 yrs Implementation 2026–35
150,000/yr Target visitor capacity	~105 tCO₂e/yr Carbon removal (prelim.)	40,000–50,000 Direct beneficiaries	25 + 80 Permanent + temporary jobs	10,000/yr Students in education programmes

The Bumbyn Togol Project will transform a 30-hectare peri-urban site into a nature-based, four-season eco-park and green-infrastructure complex, integrating land restoration, water harvesting, afforestation, recreation, environmental education, sports, tourism and commercial services within a single master-planned area. Approximately 21 hectares will be allocated to green infrastructure and afforestation, with more than 20,000 trees and shrubs planned, supported by rainwater and snowmelt harvesting, smart irrigation, renewable energy and a phased measurement, reporting and verification (MRV) system. Total investment is preliminarily estimated at USD 18.0 million, targeting USD 12.6 million (70%) from international climate and blended finance and USD 5.4 million (30%) from co-financing partners over a nine-year, stage-gated implementation programme.

Initiator: Mother Earth Eco Solutions Association/NGO • Local partner: Nalaikh District Governor's Office • Design/Engineering: Art Construction LLC

All figures in this summary are preliminary, concept-stage estimates pending detailed feasibility study, due diligence and independent verification.

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CHAPTER 1 GENERAL PROJECT OVERVIEW

1.1 Project Concept and Objectives

The Bumbyn Togol Project will transform a 30-hectare site in Enger Shand, 1st Khoroo, Nalaikh District, into a nature-based, four-season eco-park and green infrastructure complex. Building on the site's pond, surface-water runoff and green-development potential, it integrates land restoration, water harvesting, afforestation, recreation, environmental education, sports, tourism and commercial services within one master-planned area. Approximately 21 ha will be allocated to green infrastructure, afforestation, protective greenbelts, tree nurseries and soil restoration, with more than 20,000 trees and shrubs planned, supported by rainwater/snowmelt collection, smart irrigation, renewable energy, and waste segregation and composting.

Beyond conventional landscaping, the complex will include administrative and visitor-service facilities, multipurpose glass pavilions, a four-season greenhouse, an environmental education centre, pedestrian and cycling paths, sports and event areas, children's play zones, cafés/restaurants and nature-observation areas, developed in phases to serve visitors year-round. The Project aims to give Nalaikh District and eastern Ulaanbaatar a healthy, accessible green environment, reduce wind erosion and dust, improve rainwater retention and reduce groundwater reliance, while creating a platform for family recreation, environmental education, local employment, and a “living laboratory” for climate-adaptation research by schools, universities and research institutions.

The Project's environmental and climate outcomes will not remain planning assumptions: a phased MRV system will track tree and shrub survival, vegetation cover, soil organic carbon, water collection and consumption, renewable-energy generation, waste recovery and airborne particulate matter, supporting transparent reporting to investors and public authorities and providing a basis for assessing potential eligibility for carbon markets. Solutions validated at Bumbyn Togol — water harvesting, smart irrigation, green infrastructure, renewable energy and four-season operations — could subsequently be adapted for other Ulaanbaatar districts, satellite cities, provincial centres and similarly arid Central Asian cities.

1.2 Investment Summary

The table below summarises the Project's current concept, master plan and preliminary investment estimates. Figures will be reviewed and confirmed following a detailed feasibility study, land and legal due diligence, hydrological assessment, energy audit, environmental and social assessment, and financial model; the USD 5.4 million co-financing amount is a mobilisation target, not yet committed.

Indicator	Planned Figure / Information	Notes
Project name	Bumbyn Togol Four-Season Eco-Park and Green Complex	Nature-based solutions project
Location	Enger Shand, 1st Khoroo, Nalaikh District, Ulaanbaatar	Demonstration site for peri-urban green infrastructure
Total land area	30 hectares	Current area covered by the master plan
Green infrastructure & afforestation area	Approximately 21 hectares	Afforestation, greenbelts, nurseries, landscaping
Trees and shrubs to be planted	More than 20,000	Species and quantities to be confirmed in detailed planning
Implementation period	9 years	Preparation, design, construction, monitoring, replication
Total investment requirement	USD 18.0 million	Preliminary capital budget for all components
International climate / blended-finance request	USD 12.6 million	Equivalent to 70% of total investment
Co-financing target	USD 5.4 million	Target from public authorities, local government, private sector, ESG/CSR, technical assistance

Indicator	Planned Figure / Information	Notes
Target visitor capacity	Up to 150,000 visitors/year	Planned capacity after operations stabilise
Preliminary carbon-sequestration estimate	Approximately 105 tCO ₂ e/year	Planning estimate, not yet supported by baseline/MRV/verification
Project priorities	Land restoration, water resilience, green infrastructure, renewable energy, environmental education, tourism	Combines public-benefit and revenue-generating components
Project initiator	Mother Earth Eco Solutions Association/NGO	Project management, coordination, partnerships
Key local partner	Nalaikh District Governor's Office / District Citizens' Representatives Khural	Land matters, policy alignment, local cooperation
Engineering & design contractor	Art Construction LLC	Engineering design, architecture, technical solutions

1.3 Investment Rationale

The investment rationale rests on combining environmental restoration and green infrastructure — which generate long-term public benefit but limited direct commercial revenue — with revenue-generating components such as tourism, visitor services, cafés and restaurants, pavilion and venue rentals, sports, events, greenhouse operations, tree nurseries and training. This structure favours a blended-finance model: grants, climate funds, concessional finance and technical assistance for public-benefit components (land restoration, water management, afforestation, environmental education, MRV), and private-sector, strategic-operator and ESG/CSR investment for revenue-generating components. Of the total USD 18.0 million, USD 12.6 million (70%) is targeted from international climate and blended-finance sources, and USD 5.4 million (30%) from national/municipal authorities, the private sector, philanthropy and in-kind contributions — none yet formally committed; each partner's participation will be documented through binding agreements as the package is formalised.

From an investor's perspective, key strengths include a clearly identified 30-hectare demonstration site, a diversified master plan and a management system focused on measurable outcomes — restored land area, vegetation cover, tree-survival rates, water harvested, renewable energy generated, waste recovered, jobs created, and visitors and education beneficiaries reached — establishing a transparent link between financing and results. The preliminary carbon-sequestration estimate of approximately 105 tCO₂e/year should not be treated as verified carbon credits or guaranteed revenue; participation in carbon markets will depend on baseline conditions, land rights, additionality, permanence, leakage and independent verification, and should be viewed as a future supplementary opportunity rather than a core financing condition.

The four-season operating model is important to economic sustainability: warmer months bring green-space, path, event, tourism and sports activity, while winter offers heated pavilions, the four-season greenhouse, ice-skating, snow sports, education and cultural events — reducing seasonality and supporting year-round visitor flows and revenue. Before a final investment decision, land-use rights, zoning, water availability, engineering solutions, energy requirements, environmental and social impacts, market demand, pricing, operating costs, revenue projections and financing terms must be verified in detail; completing these studies in phases will enable the Project to be developed into a bankable investment package with appropriately allocated risks and measurable outcomes.

CHAPTER 2 PROJECT NEED AND STRATEGIC SIGNIFICANCE

2.1 Current Situation and Key Challenges

As Ulaanbaatar's population and urban footprint expand, demand is rising for public green spaces supporting family recreation, environmental education and healthy, active lifestyles — a need eastern Ulaanbaatar and Nalaikh District

currently cannot meet with an integrated, year-round green complex. This shortage limits residents' quality of life, environmental education for children and young people, public health, local tourism and service-economy development. Enger Shand itself has natural terrain, surface-water runoff, an existing pond and favourable nursery conditions, but inadequate protection, maintenance and integrated planning have left it exposed to soil degradation, wind erosion, dust generation, deteriorating vegetation cover, livestock encroachment and waste accumulation, with rainwater and snowmelt largely draining away uncaptured.

Nalaikh District's cold, arid, highly seasonal climate means a conventional tree-planting project would be insufficient — water sources, soil preparation, species selection, protection, maintenance, energy, financing and monitoring must be addressed as one integrated system. Exposed, degraded peri-urban soil contributes to dust during strong winds; increased vegetation cover, windbreaks and moisture management could reduce local dust, though the Project's impact will be measured within the site and nearby downwind areas rather than presented as a solution to Ulaanbaatar's overall air-pollution problem.

Water supply is a principal constraint on large-scale green infrastructure: developing the full 30-hectare site through groundwater or centralised supply alone would create cost and sustainability risks, so the Project will use natural gullies, depressions and runoff routes to collect, store and reuse rainwater and snowmelt, with drip irrigation managed by soil-moisture data — a water self-sufficiency target to be validated through hydrological study rather than assumed. Green-space access also depends on year-round usability, safety, accessibility and services for all ages; Nalaikh currently has limited integrated, four-season facilities, pushing residents to travel elsewhere and reducing income retained locally. While initial nursery and green-development activities and a master-planning concept already exist, comprehensive development requires integrated solutions across land use, hydrology, engineering, energy, environmental/social impacts, financing and operations — Bumbyn Togol must be implemented as one integrated project, not a collection of fragmented, uncoordinated investments.

2.2 Demand and Target User Groups

40,000–50,000 Direct local beneficiaries	150,000/yr Target visitor capacity	10,000/yr Students & researchers	COP17 Int'l tourism & knowledge exchange
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Direct beneficiaries are estimated at 40,000–50,000 residents of the 1st Khoroo and neighbouring khoroos, who will gain access to a safe, inclusive environment for family recreation, walking, cycling, sports, children's play, nature observation and environmental education. A wider regional user base — families from other Ulaanbaatar districts seeking day trips, schools and universities running structured programmes (up to 10,000 children, pupils and students annually), domestic and international tourists (including COP17-linked visits and knowledge exchange), and local enterprises and SMEs providing services — will diversify demand across seasons and reduce dependence on any single user group. Preliminary target capacity is up to 150,000 visitors per year once the complex is fully operational — a planning figure rather than verified demand, to be refined through market research, transport-accessibility assessment and pricing studies before an investment decision.

2.3 Alignment with Policies and Development Objectives

The Project supports Mongolian citizens' right to a healthy, safe environment and translates Vision 2050's objectives — a people-centred, liveable environment, sustainable resource use, green development and improved spatial planning — into a tangible site-level programme. It supports the Billion Trees National Movement by pairing afforestation with water harvesting, smart irrigation, nurseries, species selection and survival monitoring, and aligns with Ulaanbaatar's policies on green space per capita, district parks, walking and cycling, and river protection, by decentralising services to Nalaikh District.

The Project is also aligned with the UN Convention to Combat Desertification (reducing land degradation, restoring degraded land, drought resilience, soil health, water-use efficiency, community participation) and with COP17's focus on land, water, drought, innovative finance and private-sector participation — creating a strategic opportunity to connect the Project with international climate and land-restoration financing. Its nature-based solutions combine climate adaptation (water harvesting, soil-moisture management, drought-resistant species, protective greenbelts)

with mitigation (afforestation, soil restoration, renewable energy) and can support multiple Sustainable Development Goals on sustainable cities, water, climate action, terrestrial ecosystems and partnerships. However, policy alignment alone does not establish investment readiness: land-use rights, zoning, environmental permits, water use, building standards, procurement and financial/compliance due diligence must each be confirmed under applicable law before the Project can be considered fully investment-ready.

CHAPTER 3 INTEGRATED PROJECT SOLUTIONS AND MASTER PLAN

3.1 Core Development Concept

The master plan is built on protecting and productively using Enger Shand's natural terrain, surface-water runoff and existing pond, applying nature-based solutions that integrate water, soil, vegetation, recreation, education and commercial services rather than substantially rebuilding the site. Of the 30-hectare total, approximately 21 hectares will be allocated to afforestation, protective greenbelts, tree nurseries, green space and soil restoration; buildings and hard-surfaced areas will be kept at an appropriate scale, with green infrastructure treated as the Project's primary infrastructure rather than a residual land use.

The main spatial axis follows the site's natural surface-water flow and pond system — reservoirs, small ponds and channels will collect, store and regulate rainwater and snowmelt, functioning as irrigation sources, microclimate regulators, biodiversity habitat and environmental-education features rather than purely decorative elements. The site organises ecological conservation, education and research, public recreation and sports, tourism and visitor services, and administration into interconnected zones: environmentally sensitive areas (water sources, drainage channels, greenbelts) are kept at an appropriate distance from high-traffic facilities (visitor centre, cafés, pavilions, open-air theatre, sports, playgrounds), which are positioned near the main entrance, parking and service hubs.

The mobility plan prioritises pedestrians, cyclists and accessibility for persons with disabilities, restricting vehicle movement to parking, drop-off and service areas near the entrance and perimeter. Building design will prioritise energy efficiency, natural lighting, passive solar heat and flexible, multi-season use, increasing facility utilisation and diversifying revenue. Implementation follows a phased model that prioritises ecological infrastructure — land management, water systems, soil restoration, vegetation, protection, engineering preparation and monitoring first, then education, recreation and visitor-service facilities, then expanded revenue-generating components — distributing investment risk and linking early results to subsequent financing.

3.2 Overall Site Zoning



Illustrative site zoning concept — not to scale.

The existing pond anchors a principal water, conservation and recreation zone in the north, with boardwalks, bird-observation points and controlled shoreline access preserving its natural character. The watercourse running

through the central and southern sections forms the Project's principal green corridor, using stepped, low-erosion water-retention features rather than concrete channelisation to reduce velocity and erosion while increasing irrigation water. Afforestation, nursery and greenbelt zones follow the site boundary, prevailing wind directions and soil conditions, using multilayered living greenbelts rather than a uniform solid fence, reducing livestock encroachment, wind and dust while providing wildlife habitat and ecological corridors.

The nursery and seedling area doubles as a production, education and training zone, linked to the four-season greenhouse and environmental education centre (approximately 1,500–2,000 m²), which integrates plant propagation, experimentation, training, exhibitions and community participation. The central section hosts public events, arts, culture and sports — an open-air theatre, plaza, green lawn and exhibition space — while quieter nature-observation and short-stay camping areas use only small, natural-material platforms, shelters and interpretive signage. A visitor centre near the main entrance centralises information, ticketing and services; a central administration and service building (approximately 1,500–2,000 m²) houses management, security and a phased digital monitoring system; and three multipurpose glass pavilions support flexible art, sport, play and event use. The circulation network totals roughly 2 km of internal roads, 10 km of pedestrian paths and 5 km of cycle lanes, designed for children, older persons and users with limited mobility, with unified lighting, camera surveillance, waste-separation and signage standards applied site-wide.

3.3 Four-Season Operations and Technology Solutions



Programming is planned by season so the complex draws visitors and revenue year-round: spring focuses on tree planting, seedling cultivation, birdwatching and environmental education; summer intensifies activity across green spaces, the pond, sports, the open-air theatre and tourism services; autumn covers tree maintenance, seed and planting-material preparation, harvest, a second planting period and winter preparation; and winter offers ice skating, sledding, snow play, heated pavilions, the four-season greenhouse, education programmes and cultural events.

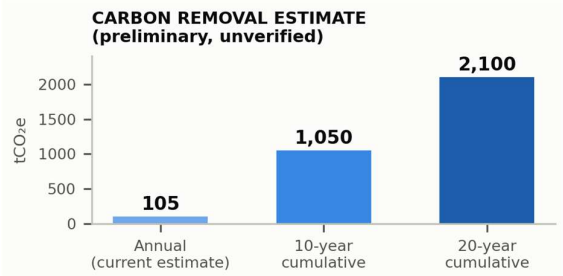
This is underpinned by an integrated technology system. Water technology collects rainwater and snowmelt along natural runoff routes into the pond, reservoirs and storage tanks, feeding sensor-controlled drip and zoned irrigation calibrated to soil moisture, weather data, plant species and seasonal demand — reducing overwatering, salinisation and losses, with water balance regularly updated from meter and digital-record data. The energy system may combine solar photovoltaic generation, ground-source heat pumps, heat-recovery ventilation, passive-solar design and high-performance insulation, sized through a building-specific energy audit rather than a fixed target. Waste management follows source separation, recyclable-material recovery and organic-waste composting, with plant and food waste from the greenhouse, cafés and landscaping reused as soil-improvement material. A digital management and monitoring system will integrate data on water, energy, weather, soil moisture, air quality (PM2.5/PM10), plant survival, visitor flows and security — feeding both site operations and the Project's MRV system. Native and climate-adapted species are prioritised, selected for water demand, cold/drought tolerance, windbreak value, biodiversity value and maintenance cost, with soil structure, fertility, salinity and moisture assessed and improved before planting.

CHAPTER 4 PROJECT BENEFITS AND ECONOMIC VALUE

4.1 Environmental and Climate Benefits

The principal environmental benefit is the phased restoration of approximately 21 hectares of degraded peri-urban land into functional green infrastructure, with more than 20,000 trees and shrubs planned. Performance will be judged on survival and growth rates, vegetation cover, soil stabilisation and water consumption rather than the number of trees planted alone, directing investment towards long-term restoration outcomes. Afforestation and greenbelts are expected to reduce wind speed and exposed soil; preliminary, unverified targets are 5–10% lower seasonal average PM2.5 and 10–20% lower PM10 at downwind monitoring points during high-dust events, to be validated against pre-Project baseline data and repeated seasonal measurement rather than presented as a citywide air-quality solution.

Water management is central to climate resilience: natural gullies and surface-runoff routes will feed the pond, reservoirs and storage facilities for irrigation, reducing dependence on groundwater and centralised supply, with the achievable level of water self-sufficiency determined through hydrological study, water-balance modelling and long-term precipitation data rather than assumed. Sensor-based drip irrigation will reduce overwatering, runoff, evaporation and distribution losses while enabling water consumption per unit of land to be monitored and reported.



Preliminary, unverified planning estimate — final removals depend on species, survival, baseline soil carbon and independent verification.

Afforestation and soil restoration are preliminarily estimated to remove approximately 105 tCO₂e per year (94.5 tCO₂e from vegetation and 10.5 tCO₂e from soil organic carbon), equivalent to roughly 1,050 tCO₂e over 10 years and 2,100 tCO₂e over 20 years at this rate. These are planning estimates for investment screening only and do not represent verified carbon credits; actual removals will depend on species, survival and growth rates, baseline soil-carbon content, management practices, fire and pest risk, and will be determined through permanent sample plots, soil-sample laboratory analysis, remote sensing and independent verification. Renewable-energy and energy-efficient building solutions may further reduce operational emissions, to be quantified through building-specific energy audits and actual consumption data. Aquatic areas, greenbelts and native, climate-adapted planting are expected to expand habitat for birds, insects and small animals, and source-separated, composted waste will reduce chemical-fertiliser use and transport requirements — with all outcomes measured against established baselines rather than presented as guaranteed results.

4.2 Social and Local Benefits

40,000–50,000 Direct beneficiaries	10,000/yr Students in education programmes	25 + 80 Permanent + temporary jobs	150,000/yr Target visitor capacity
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The Project will give an estimated 40,000–50,000 residents of the 1st Khoroo and neighbouring khoroos safe, year-round access to recreation, sports, nature observation and environmental education, with potential benefits for physical activity, well-being and community interaction. Its four-season, integrated services will also reach residents of other Ulaanbaatar districts and domestic/international visitors, with a target capacity of up to 150,000 visitors per year once operations stabilise, increased gradually in line with demonstrated demand.

The environmental education centre, four-season greenhouse, tree nursery, water-harvesting system, renewable-energy installations and monitoring equipment will support practical learning for up to 10,000 children, pupils and university students annually, with curricula developed alongside schools, universities and research institutions. Employment is estimated at approximately 25 permanent and up to 80 temporary positions across nurseries,

greenhouse operations, maintenance, visitor services, hospitality, sports, events, security and cleaning, with defined shares of procurement, rentals and services opened to local residents, youth, women and small and medium-sized enterprises under fair, transparent competitive processes. Universally accessible design — path gradients, sanitation, signage, lighting and safety arrangements for children, older persons and persons with disabilities — together with arts, cultural programming and the open-air theatre, are intended to make the complex both a recreational destination and a community identity hub, reinforced by consistent resident, civil-society, school and business participation throughout implementation.

4.3 Revenue Model and Operational Sustainability

Green spaces, water systems and ecological restoration deliver substantial public and environmental value but limited direct revenue; pavilions, the greenhouse, cafés and restaurants, sports facilities, events, training programmes, rentals and tourism services are expected to cover a proportion of operating, maintenance and staffing costs. Planned revenue streams include visitor and service fees for special exhibitions, education programmes, sports, winter activities, pavilion and greenhouse use, guided tours and equipment rental, with common green areas kept publicly accessible and priced with consideration for social accessibility; café, restaurant and retail concessions structured as fixed-plus-variable lease arrangements with specialised operators; rental of pavilions, the open-air theatre, plaza and training rooms with differentiated, event-based tariffs; sale of seedlings, ornamental plants, greenhouse produce and soil-improving compost, validated through a dedicated business plan; environmental education, research and professional-training contracts with schools, universities and corporate ESG/CSR programmes; and sponsorships linked to defined results, timeframes and reporting rather than only naming rights.

Water and energy savings from smart irrigation, renewable energy and efficient buildings may reduce operating costs but will be assessed against an established baseline using actual operating data rather than assumed at a fixed percentage, netting technology, maintenance and specialist-personnel costs against any savings. The financial model will incorporate visitor numbers, seasonal variation, pricing, rental income, sales, staffing, energy, water, security, insurance, maintenance, replacement planting, marketing, taxes and equipment renewal, tested under base, conservative and downside scenarios to determine which components are financed through grants and which through concessional loans, private investment or operator capital. As a blended public-benefit and revenue project rather than a conventional real-estate development, sustainability will be judged on a combination of public financing, climate funds, concessional capital, private operators and service revenue rather than full commercial cost recovery. A dedicated reserve, funded from operating revenue and independent of annual budget swings or operator profitability, is planned to finance long-term green-space maintenance, water systems, equipment, replacement planting and monitoring, supported by transparent financial reporting and independent audits.

4.4 MRV and Carbon-Market Readiness



The measurement, reporting and verification (MRV) system is the principal mechanism for demonstrating the Project's environmental, social and economic results with reliable data, integrating land restoration, plant survival, soil, water, air quality, energy, waste, employment, visitors and education beneficiaries — not only carbon. Development begins with baseline documentation of existing land cover, trees, soil carbon, water runoff and consumption, air quality, weather, energy, waste and visitor use before major construction, water infrastructure or afforestation begins, since Project-induced change cannot otherwise be reliably distinguished from existing conditions.

Tree and shrub monitoring uses georeferenced permanent sample plots and a digital registry recording species, quantities, dimensions, survival, damage and replacement planting, assessed seasonally for the first two years and

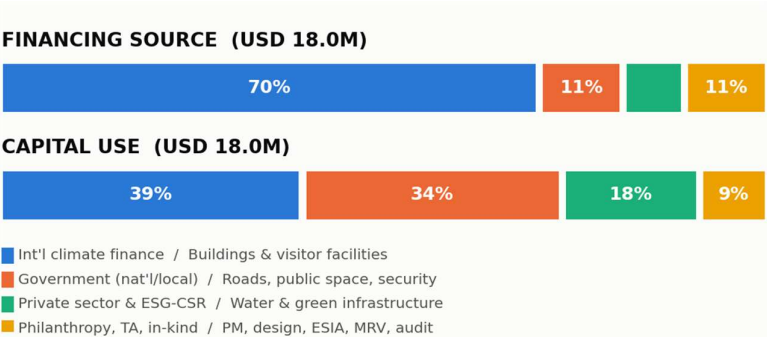
annually thereafter. Land-cover change is tracked by combining satellite imagery, drone mapping and ground-control points; soil organic carbon is measured by laboratory analysis at baseline with repeat measurement roughly every two to three years using a fixed sampling protocol; and air quality (PM2.5/PM10) is measured at upwind, on-site and downwind points alongside automated weather-station data, with low-cost sensors requiring calibration and quality-assurance oversight by a qualified organisation. Water, energy, waste and social/economic indicators (employment, local procurement, visitors, education beneficiaries, safety incidents) are similarly tracked and consolidated into an integrated digital MRV database with a full audit trail — source, date, location, responsible staff, methodology and change history — reviewed annually by an independent organisation to strengthen investor confidence and eligibility for results-based financing.

Before any carbon-market participation is considered, additionality, baseline conditions, land-use rights, ownership of carbon outcomes, permanence, leakage and reversal risk, and double-counting safeguards must be assessed, with a protection plan, replacement-planting obligations and risk buffer established given that stored carbon can be reversed by fire, pests, mortality or water shortage. Verra VCS methodology VM0047 is identified as one potential option, but reference to a methodology does not mean the Project has been registered, verified or approved to issue carbon credits — a professional preliminary assessment is required first. The MRV system is intended as a core planning and financing tool — supporting grant-results reporting, performance-based financing, ESG/CSR partnerships and green lending — not solely a carbon-credit mechanism.

CHAPTER 5 INVESTMENT, FINANCING AND IMPLEMENTATION

5.1 Investment Requirements and Financing Structure

Total investment to fully implement the Project is preliminarily estimated at USD 18.0 million, covering land restoration across the 30-hectare site, water infrastructure, afforestation, buildings and facilities, vehicle and pedestrian routes, sports and recreational areas, visitor services, renewable energy, security, waste management, Project management, design, MRV and independent-audit costs. This is a concept-stage capital estimate to be updated following detailed design, bills of quantities, unit-cost estimates and the procurement plan. USD 7.1 million is planned for principal buildings and visitor-service facilities (USD 1.5M administration and service centre, USD 3.6M for three multipurpose glass pavilions, USD 2.0M for the environmental education centre and four-season greenhouse); USD 6.1 million for roads, public spaces, sports, seasonal recreation and security infrastructure; USD 3.2 million for water, green-infrastructure and waste-management systems; and USD 1.6 million for Project management, feasibility studies, engineering design, environmental/social assessment, MRV and independent audits.

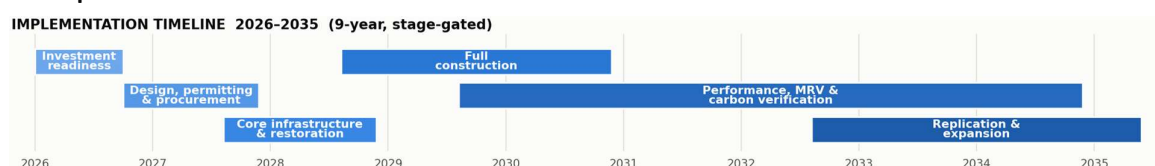


Of the USD 18.0 million total, USD 12.6 million (70%) is targeted from international climate and blended-finance sources — potentially structured as grants, concessional loans, results-based payments or technical assistance — directed towards land restoration, water resilience, green infrastructure, renewable energy, environmental education, MRV and public-benefit infrastructure. The remaining USD 5.4 million (30%) is targeted from co-financing sources: USD 2.0 million from national, municipal and local government participation; USD 1.5 million from the private sector, ESG/CSR programmes and strategic partners; and USD 1.9 million from philanthropic organisations,

technical assistance and in-kind contributions of goods, equipment, works and services. None of this co-financing is yet committed; each partner's decision, source of funds, disbursement schedule and obligations must be documented through formal instruments, with non-cash and in-kind contributions recorded at fair market value and protected against double counting.

Private investment is expected to concentrate in revenue-generating components — cafés, restaurants, the greenhouse, tree nursery, pavilions, sports facilities, events and visitor services — structured through leases, concessions, management agreements or revenue-sharing arrangements, with public access, pricing, service quality, asset ownership and transfer arrangements defined in advance. Financing disbursement will be phased and linked to implementation milestones and verified results rather than mobilised all at once, reducing investment risk. The current USD 18.0 million estimate will also be reviewed for price escalation, exchange-rate movement (relevant given imported glass structures, solar photovoltaic systems, heat pumps and sensors), import duties, transportation, insurance, contingencies and financing fees as the feasibility study and financial model are finalised.

5.2 Implementation Phases

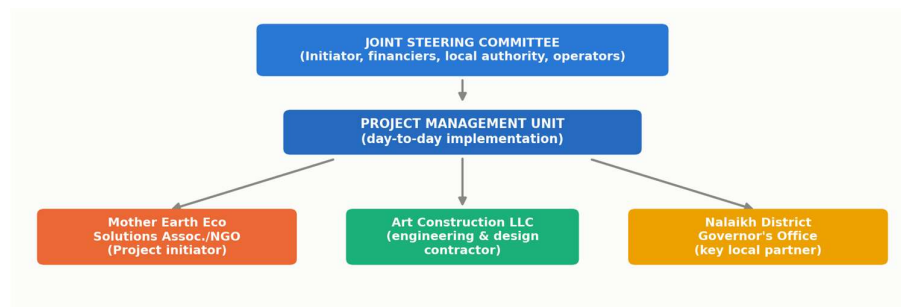


Implementation is planned over nine years through overlapping but sequenced phases, with major construction withheld until land, water, engineering, environmental and financing conditions are adequately addressed. The investment-readiness phase (Q3–Q4 2026) presents the Project to financiers and undertakes due diligence on land-use rights, zoning and ownership, hydrological studies, energy audits, baseline monitoring and preliminary carbon-methodology assessment, producing a data room, preliminary feasibility study, financing structure and risk register — preliminary investor interest will not be treated as a financing commitment.

Detailed design, permitting and procurement preparation (2027) confirms the master plan, completes engineering investigations and detailed designs, and develops environmental/social impact assessment, biodiversity, water-management, occupational health and safety, stakeholder-engagement and grievance-redress plans, establishing bills of quantities, budgets and procurement methods; early procurement may begin for long-lead equipment. Core infrastructure and ecological restoration (2027–2028) establishes site protection, temporary service roads, drainage, water-collection and storage facilities, primary irrigation, utilities and baseline monitoring, with afforestation beginning once adequate water supply and protection are in place; the environmental education centre, greenhouse and initial renewable-energy systems could be commissioned during this period for early education and revenue use.

The full construction phase (2028–2030) commissions the central administration and service centre, three glass pavilions, cafés, restaurants, roads, pedestrian and cycling routes, public spaces, the open-air theatre, sports facilities, winter-recreation facilities and waste-management systems progressively, with technical testing, staff training and clearly defined contractor warranty obligations before each commissioning. A performance, MRV and carbon-opportunity verification phase (2029–2034) regularly measures and reports tree survival, vegetation cover, soil carbon, water, energy, air quality, waste, visitors, employment and education outcomes, potentially advancing to carbon-project registration if methodology, land rights and economics are confirmed. Replication and expansion could begin in 2032–2035, converting validated results into standardised models and implementation guidelines adapted to other locations rather than a fixed design. Progression between phases is stage-gated against defined readiness criteria — land rights, permits, hydrological feasibility, approved designs, budgets, financing sources, safeguards and procurement readiness — postponing major investment where these are not yet confirmed.

5.3 Governance and Partnership Structure



Implementation involves cooperation among civil-society organisations, local authorities, technical contractors, the private sector, research institutions and financiers. Mother Earth Eco Solutions Association/NGO is the Project initiator and lead coordinating organisation, responsible for planning, partnerships, resource mobilisation and reporting. The Nalaikh District Governor's Office and District Citizens' Representatives Khural are the principal local partners on land use, zoning, utilities, permits and community participation — though government support alone does not confirm land, financing or permits; each matter requires formal decisions, agreements or certificates from the competent authority. Art Construction LLC serves as engineering and design contractor for master planning, architecture and technical documentation, subject to independent technical supervision and expert budget validation to manage potential conflicts of interest where design, budgeting, construction and supervision might otherwise overlap.

A joint steering committee — including the initiator, local authorities, principal financiers and, where relevant, private operators and independent experts — will oversee strategic decisions, financing, budgets, major contracts and risk, with composition, voting rights and reporting defined through its charter. Day-to-day implementation sits with a dedicated Project Management Unit covering engineering, finance, procurement, legal affairs, environmental/social safeguards, MRV and public communications, managed through an integrated system covering schedule, budget, cash flow, contracts, risk and quality. Where international financing is mobilised, the Project will apply financial-management, procurement, anti-fraud, anti-money-laundering, sanctions-compliance and transparency requirements, with dedicated accounts, delegated authority levels, dual approvals and annual independent audits.

Operational management of the complex — administration, green-space maintenance, water, energy, pavilions, greenhouse operations, sports, cafés, restaurants, events, security and cleaning — must be defined before construction is completed, whether under a single operator or several specialised contracts, each with clearly defined service standards, pricing, revenue sharing, maintenance obligations and termination conditions. Local residents, businesses, schools and civil-society organisations will be engaged throughout planning, implementation and operations via stakeholder meetings, information disclosure, consultation and a grievance-redress mechanism, with participation linked to employment, procurement, ecological monitoring, education and volunteering rather than information-sharing alone. A progressively developed investment data room — registration documents, land records, designs, budgets, studies, permits, contracts, financial statements, procurement plans, the risk register, safeguards and MRV methodologies — will support efficient, transparent due diligence, with MRV data reviewed by qualified organisations and, where the Project participates in carbon markets, contracts clearly defining ownership of carbon outcomes and measures preventing double counting.

CHAPTER 6 RISKS, REPLICATION POTENTIAL AND PARTNERSHIP PROPOSAL

The Bumbyn Togol Project combines land restoration, sustainable water management, green infrastructure, renewable energy, public services and revenue-generating activities within a single site. Success depends on more than completing buildings on schedule — the Project must simultaneously deliver measurable environmental outcomes, long-term operational viability, financial sustainability, transparent governance and meaningful local participation. Identifying risks from the earliest stages of investment decision-making, monitoring them throughout each phase and applying evidence-based mitigation will be essential to strengthening investor confidence.

6.1 Key Risks and Mitigation Measures

Risk Category	Key Concern	Mitigation Approach
Land & permitting	Usage rights, cadastral status, zoning and regulatory approvals not yet confirmed	Detailed legal due diligence; unresolved matters as financing conditions precedent
Water availability	Low, seasonal precipitation; rainwater/snowmelt harvesting unproven at full scale	Hydrological studies, site water balance, phased reservoirs/irrigation, smart metering
Tree & ecosystem survival	Species mismatch, irrigation failure, livestock, pests, fire	Native/adapted species, pilot planting, sensor irrigation, nursery replacement stock, patrols
Cost & schedule escalation	Imported-equipment prices, exchange-rate movement, design changes	Updated engineering estimates, supplier-neutral specs, local sourcing, contingency, performance-backed contracts
Energy demand	Heat loss in glass pavilions, greenhouse and visitor centres raising operating costs	Energy audit, passive design, insulation, phased renewable sizing after demand reduction
Visitor demand	150,000/year target is planned capacity, not verified market demand	Market research, phased opening, diversified revenue, competitive operator selection
Financing gap	USD 12.6M international and USD 5.4M co-financing not yet committed	Independently deliverable phased packages; results-linked disbursement; no source treated as secured until formalised
Environmental & social safeguards	Potential impacts on water regimes, soil, biodiversity and community interests	ESIA, management plans, OHS, grievance mechanism, monitoring, suspension authority for serious breaches
Governance & fraud	Procurement, conflicts of interest, reporting quality, misuse of funds	Separated roles, competitive procurement, independent audits, disclosure, controlled data room
Carbon-outcome uncertainty	~105 tCO ₂ e/yr estimate unverified; mortality, methodology and double-counting risk	Baseline studies and independent verification before market participation; no guaranteed carbon revenue in core model

These risks are not addressed through a one-time assessment: they are managed through a living risk register updated throughout the Project lifecycle, with each risk assigned an owner, a probability and impact rating, mitigation actions, an implementation timeframe and a residual-risk assessment. Decisions to proceed to subsequent financing stages are linked to legal and technical readiness, approved budgets, environmental and social safeguards, and financial criteria — a stage-gated approach that protects invested capital and allows the Project's scope to be adjusted when necessary.

6.2 Replication Potential

Beyond a single park, Bumbyn Togol is designed as a 30-hectare demonstration site for green-infrastructure solutions suited to arid and semi-arid cities — testing rainwater and snowmelt harvesting, water-efficient smart irrigation, dryland afforestation, tree nurseries, greenhouses, renewable energy, four-season public space and environmental MRV under real operating conditions. If results are verified, the Project's experience, data and technical solutions could be standardised into a knowledge package — master-planning templates, plant-species selection methods, water-balance models, smart-irrigation specifications, tree-maintenance regimes, operator manuals, environmental-monitoring indicators and training programmes — for adaptation in other Ulaanbaatar districts, satellite cities, provincial centres and similarly arid Central Asian cities.

The master plan should not, however, be copied directly to another location: each new site requires prior assessment of land rights, soil structure, water resources, climate, plant suitability, population density, user demand, infrastructure access, financial capacity and local legal conditions, applying a modular, scalable model rather than one fixed design. A decision to replicate should follow verification of tree survival, water consumption, energy efficiency, visitor flows, operating costs, local participation and measurable environmental outcomes, transparently documented including both successful and unsuccessful solutions — potentially positioning Bumbyn Togol as a

regional knowledge and training centre for investors, municipal authorities, research institutions and other implementing organisations. Replication financing may combine national and local budgets, international climate funds, concessional and green finance, public-private partnerships, ESG/CSR programmes and results-based financing instruments; verified results from the initial Project would reduce risks, shorten design timelines and lower transaction costs at subsequent locations.

6.3 Investment and Partnership Proposal

The Project seeks USD 12.6 million (70%) in international climate and blended finance, with the remaining USD 5.4 million (30%) targeted from national and local authorities, the private sector, ESG/CSR programmes, philanthropy, technical assistance and in-kind contributions — figures to be updated following the detailed feasibility study, design, environmental/social assessments and financial due diligence; the proposed co-financing sources are not yet fully confirmed. The Project requires an appropriate combination of long-term concessional loans, grants, technical assistance, private investment and results-based financing: climate and development finance for components with high public and environmental benefit but limited direct commercial revenue, and private investment or operator agreements for revenue-generating components such as visitor services, food and beverage, events and rentals.

Prospective financial partners are invited to conduct a joint investment-readiness assessment — aligning the detailed feasibility study and financial model with international requirements, opening a controlled digital data room, and jointly scoping legal, land, technical, environmental, social, financial and governance due diligence — potentially leading to an indicative term sheet defining investment conditions, financing phases, performance criteria and risk allocation. Technical and knowledge partners, including universities and research institutions, are invited to cooperate on water-balance modelling, hydrological studies, smart irrigation, dryland afforestation, renewable energy, passive-building design, greenhouses, remote sensing and carbon MRV. Private-sector investors and operators are invited to participate through transparent, competitive processes in restaurants, cafés, visitor services, event venues, education, greenhouse and seedling operations, sports and seasonal services, with partnership arrangements clearly defining public access, service quality, pricing, environmental standards, revenue sharing and responsibilities at contract expiry.

Presenting the Project at international meetings and platforms, including COP17, should not be regarded as a guarantee that financing will automatically be secured — it is an opportunity to begin substantive discussions with investors, development organisations, technology partners and research institutions, leading towards disclosure of Project information, co-financing of detailed studies, appointment of technical partners, agreement on a due-diligence schedule and preparation of indicative financing terms. Bumbyn Togol is not merely a proposal to establish a conventional park: it is a measurable climate-resilience asset integrating degraded-land restoration, adaptation to water scarcity, urban green infrastructure, biodiversity support, air-quality monitoring, renewable energy, environmental education and local employment. Its value will be determined not by the scale of its stated ambitions, but by actual performance demonstrated through research, stage-gate criteria, transparent governance, continuous monitoring and independent verification — inviting investors, financiers and technical partners to jointly assess risks in detail, support the initial investment-readiness phase, and make subsequent financing decisions progressively on the basis of verified results.

