

# Planning & Financial Valuation Model for Sustainability Investments



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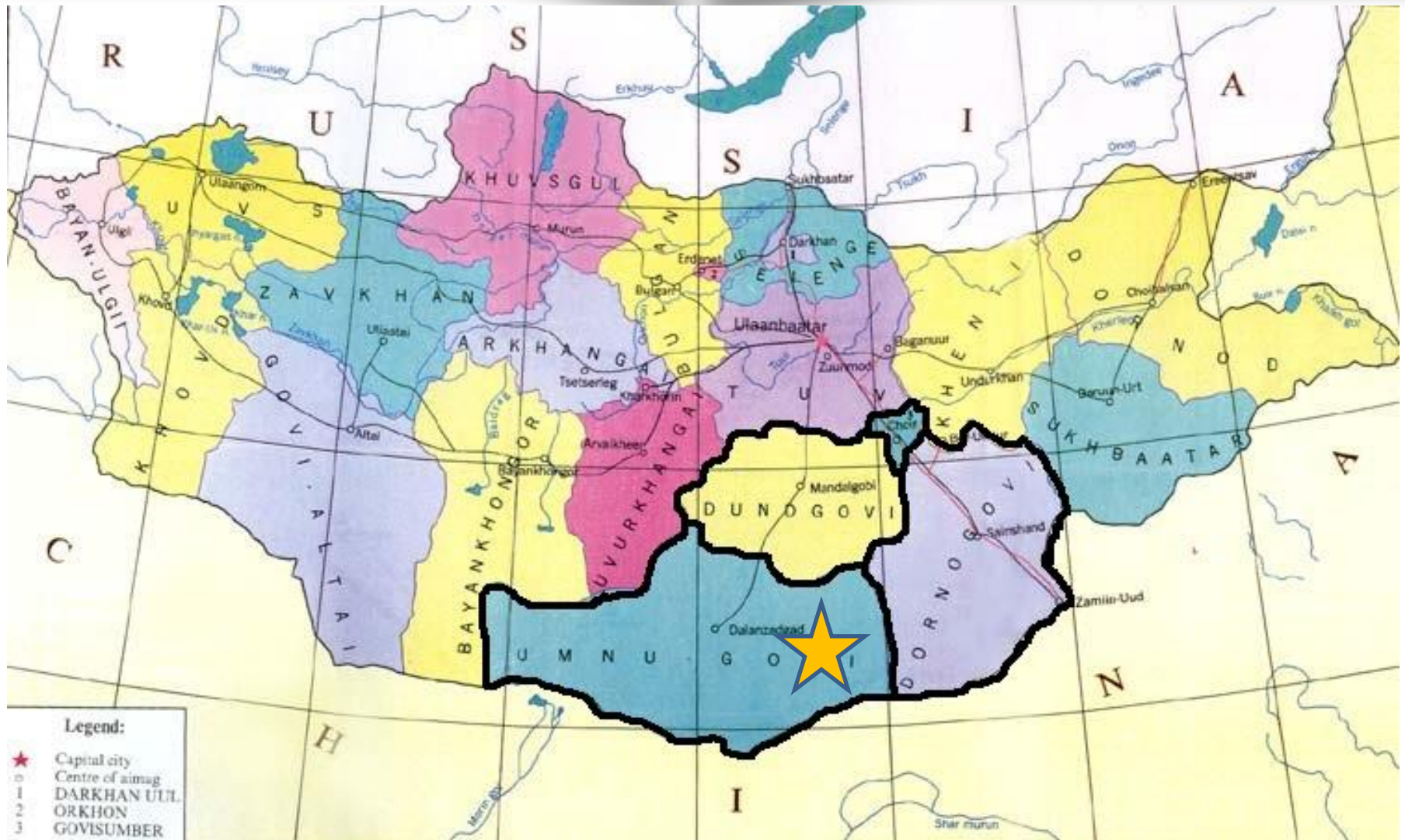
Sustainability  
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# The Oyu Tolgoi Project

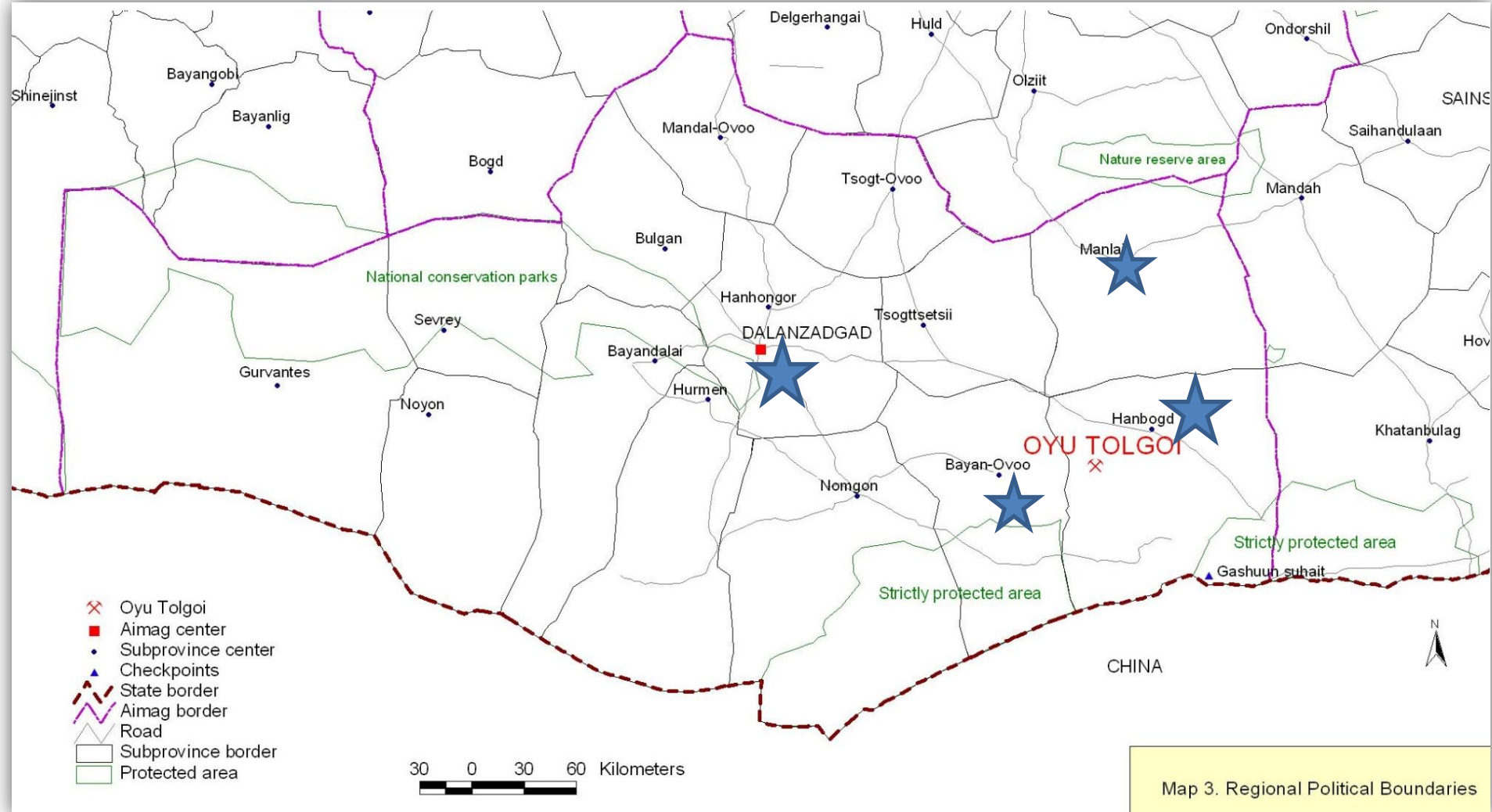


- Chronology: Investment Agreement effective March 2010.
- Oyu Tolgoi LLC: 66% Ivanhoe; 34% Govt of Mongolia
- Employee ramp up during construction: 350 on-site staff at beginning 2010; 17,000 by mid-2011
- Lifespan of mine is evolving: currently from 27+ years.
- National Economic Impact – contribute 35% of GDP by 2020
- In remote region – Omnogovi popn: 50,000 at < 1 per sq km.
- Other mines in region – especially coal (TT 8 billion tone reserve)
- Our hosts and neighbors: Khanbogd Soum 2010 Popn: 3,500 0.2/sq km (>16,000 camels)
- During operation approximately 3,500-4,000 staff (90% Mongolian)

# OT Mine Location



# OT Mine-impacted Communities



Map 3. Regional Political Boundaries

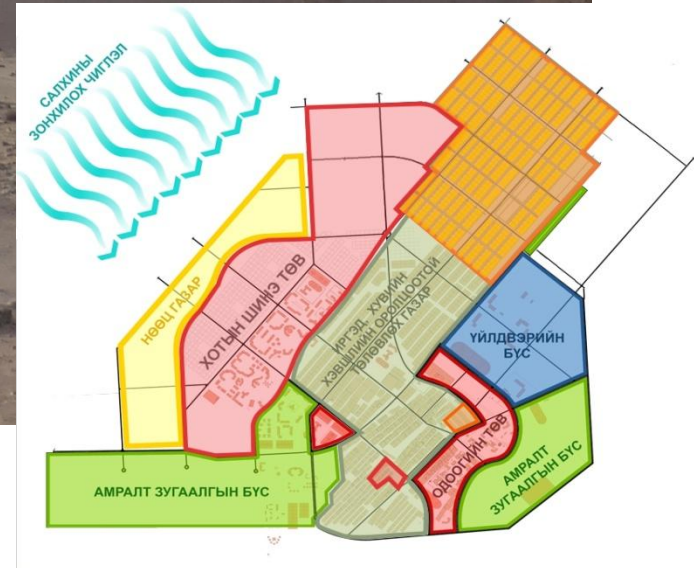
# Southern Gobi



# The Oyu Tolgoi Project



# The Local Community: Khanbogd



# OT's Stakeholder Perception Study, March 2011



## Key issues mentioned by stakeholders in mine impacted communities:

- Infrastructure:** Lack of commitment from OT for setting up tangible basic infrastructure and services. Want to see tangible investments such as power, road, water supply, and OT employee housing.
- Procurement:** Current local procurement share very low and of low value.
- Employment & Training:** People are not hired to do technical and operational work, and don't see OT's training programs to upgrade local people's skills. Local OT employees currently do only menial jobs for low wages: cleaning, dish washing, laundry.
- Local business development:** Local businesses face multiple constraints to becoming productive suppliers: access to finance, lack of infrastructure, knowledge and technology.
- Environment:** Want to see better environmental protection and rehabilitation efforts from OT and its contractors. More attention to pastureland damage and need to get local people involved in protection and rehabilitation efforts.

# Progress so far: Some Challenges for Oyu Tolgoi

- Prior community support largely ad-hoc community donations.
- Since signing of investment agreement, massive ramp-up in construction
- Local expectations high; but so far only disruption to traditional way of life due to massive off-site construction
- Community Relations and Sustainable Development (CRSD) Department largely reactive. We are learning that it is more expensive to be reactive than it would be to be proactive.
- Progressive move from:
  - mitigating negative impacts of construction, to
  - responding to perceived risks, to
  - responding to the need to:
    - be a good neighbor;
    - deliver local socio-economic benefit, and thus
    - spur regional development.

# How IFC Financial Valuation Tool might help



1. Current “policy” for operation: FIFO and remote supply from PRC and Ulaanbaatar.
2. Hard to justify to management investment in social infrastructure – arguments to CFO over supporting social license to operate and “because it’s a good thing to do” not enough.
3. Lack of Regional Development strategy: current approach reactive rather than proactive; (legacy of ad-hoc interventions through donation programs).
4. Need a tool to demonstrate real business and shareholder value of OT regional development strategy and community investments.

# OT Financial Valuation Application Objective



**To test a tool and process that enables Oyu Tolgoi to:**

1. Weigh and compare social investments and local development initiatives;
2. Develop a robust business case for the Regional and Community Development portfolio;
3. Design a long-term local development and risk management strategy;
4. Facilitate internal decision-making through objective analysis bringing in priorities across business functions;
5. Monitor effectiveness of local investments over time.

# FV Sequenced Steps and Actions for Oyu Tolgoi

- ✓ Validate risk/opportunity map (risk register & stakeholder perception data); select programs for analysis
- ✓ Articulate KB development Scenarios A (status quo) and B (additional investment) and get cross-function buy-in
- ✓ Assess assumptions, data/evidence base for investments
- ✓ Draft risk consequence table: type, frequency, costs
- ✓ Enter FV model basics: project phases, cash flows, WACC
- ✓ Conduct cost-benefit analysis per investment
- ✓ Determine 'importance' & 'quality' rating for each investment
- ✓ Run model & analyze preliminary output
  - ❑ Validate & refine assumptions & inputs with management
  - ❑ Rerun model & consider implications for investment
  - ❑ Train OT staff to manipulate model and interpret output

# KB Development Investment Portfolios: Sc A & B

NPV of Scenario B “with” scenario

—

NPV of Scenario A “without” scenario

=

NPV of Sustainability Investment

*Scenario B : greater than Sc A*

- significant infrastructure
- local housing
- new health & education facilities
- significant local econ dev

*Scenario A: base case*

- minimal infra support
- maintain on-site housing
- extension of existing health & education facilities
- existing local business development commitments

*Output = value difference*

**OT Staff Validating Sc A & B**  
Senior Management  
Regional Development Team  
Communities Team  
Operations Team  
Construction Team

# FV Risk Consequences



**To measure the risk mitigation potential of local development initiatives:**

1. FV tool models events that could cause a substantial decline in the value of a project.
2. Informed by over 50 global extractive cases reviewed.

**Sustainability-related event risks fall into 6 generic categories:**

1. Delay in the planning phase (pre-feasibility, feasibility)
2. Delay in the construction phase
3. Disruption in the production phase (operations)
4. Added costs (unforeseen)
5. Lawsuits (risk that can also occur after the closure of the mine)
6. Project cancellation/expropriation

# OT FV Tool: Preliminary Findings

Being reactive is costing more than being proactive.

## Relevant OT Risks:

1. Government expectations—jobs & local content
2. Population expectations—infrastructure & skilled jobs
3. Training to maintain and operate machinery
4. Workforce safety, comfort & productivity

## Value Protection Drivers:

1. Avoiding government permit delays (slowing construction or production)
2. Avoiding stakeholder protests/blockades leading to delays

## Value Creation Drivers:

1. Maintaining concentrator and avoiding production delays
2. Hiring and retaining Mongolians to meet 90:10 commitment and pay local wages rather than ex-pat wages

# Timing of IFC Support and FV Subject



## Is the timing optimal?

Now is a difficult time:

- Peak construction: massive disruption
- Community expectations high, and so far unmet
- Management stretched and focused on “getting to first ore”
- But: Timing has proved to be just right
  
- If timing too early, perhaps hard to get attention of senior management (now, expressions of community outrage have sharpened management attention on community issues)
- Timing too late: lost opportunity to set up the right framework

# Early Benefits from the FV model work



- Even without output numbers, FY tool work has already focused management attention around the issue: Effort brought convincing case to the CEO representing all operational functions, well beyond Community Relations team alone.
- Already evidence of improved appetite for regional development investment
- Also highlighted risks associated with host community hostility to project

# Next steps



- Complete first run on Regional Development scenarios
- Build local in-house team who can run model
- Find way to access occasional support from FV team (e.g. “approved” consultants)
- Explore other options:
  - Employee housing options (direct support, mortgage guarantee, rent to own etc.)
  - Health and education delivery options (PPPs etc)
  - Industrial estate development options
  - Training and other mechanisms to get to 90:10 (apprentiships etc)
  - Opportunities for mining industry cluster (with Tavan Tolgoi, Tsagan Survarga etc.)