THE TENURE RISK TOOL: HELPING INVESTORS MEET ENVIRONMENTAL, SOCIAL AND GOVERNANCE CRITERIA

Tenure disputes – or disputes over claims to land and natural resources – are endemic in emerging market agricultural land investments. Investors that cannot earn social licence to operate can struggle to access and use land they have leased or acquired regardless of their legal standing. The resulting delays or abandonments cause severe financial losses, reaching $52 million in the case of an East African greenfield sugar investment.

Our research demonstrates that disputes with local communities over tenure expose investors to delays that can last years or even decades. Using this example along with further data from 80 businesses and 90 cases of land tenure conflict, we developed the Tenure Risk Tool (TRT). Our model shows that these disputes can cause financial risks of up to 2.5 times the original Net Present Value (NPV), or over $100 million (see Table A).

Investors in agriculture should be aware that tenure risk is becoming increasingly important. Familiar megatrends like climate change, population growth and spreading communications infrastructure are simultaneously ratcheting up pressure on productive land and handing local people more powerful tools to protect their interests and rights. Growing interest in environmental, social and governance (ESG)-friendly portfolios means that investors who can assess, avoid and mitigate tenure risk are at a competitive advantage.

TABLE A: ESTIMATED COSTS OF TENURE RISK FROM TRT USING A RANGE OF COMMODITIES, LOCATIONS AND PROJECT SIZES

CROP	LOCATION	BEST CASE	MEDIAN CASE	WORST CASE	NPV RANGE
Oil palm	Gôh-Djiboua District, Côte d'Ivoire	$9,766,450	$16,091,647	$21,806,680	30-66%
Oil palm	Grand Kru, Liberia	$9,841,372	$16,351,502	$22,133,101	30-67%
Oil palm	Kalangala, Uganda	$8,251,147	$13,340,337	$18,770,602	25-57%
Sugar cane	Tana River County, Kenya	$31,221,160	$68,328,748	$91,919,143	34-100%
Sugar cane	Chikwawa District, Malawi	$35,082,495	$77,429,863	$100,862,290	38-110%
Sugar cane	Kilombero District, Tanzania	$29,373,008	$63,018,219	$86,363,927	32-94%
Rice	Gambela, Ethiopia	$2,481,356	$6,621,927	$8,570,430	72-248%
Coffee	Volta Region, Ghana	$283,908	$479,987	$762,148	112-286%

FIGURE A: ACTUAL DELAY DAYS FROM CASES OF TENURE CONFLICT IN AFRICA
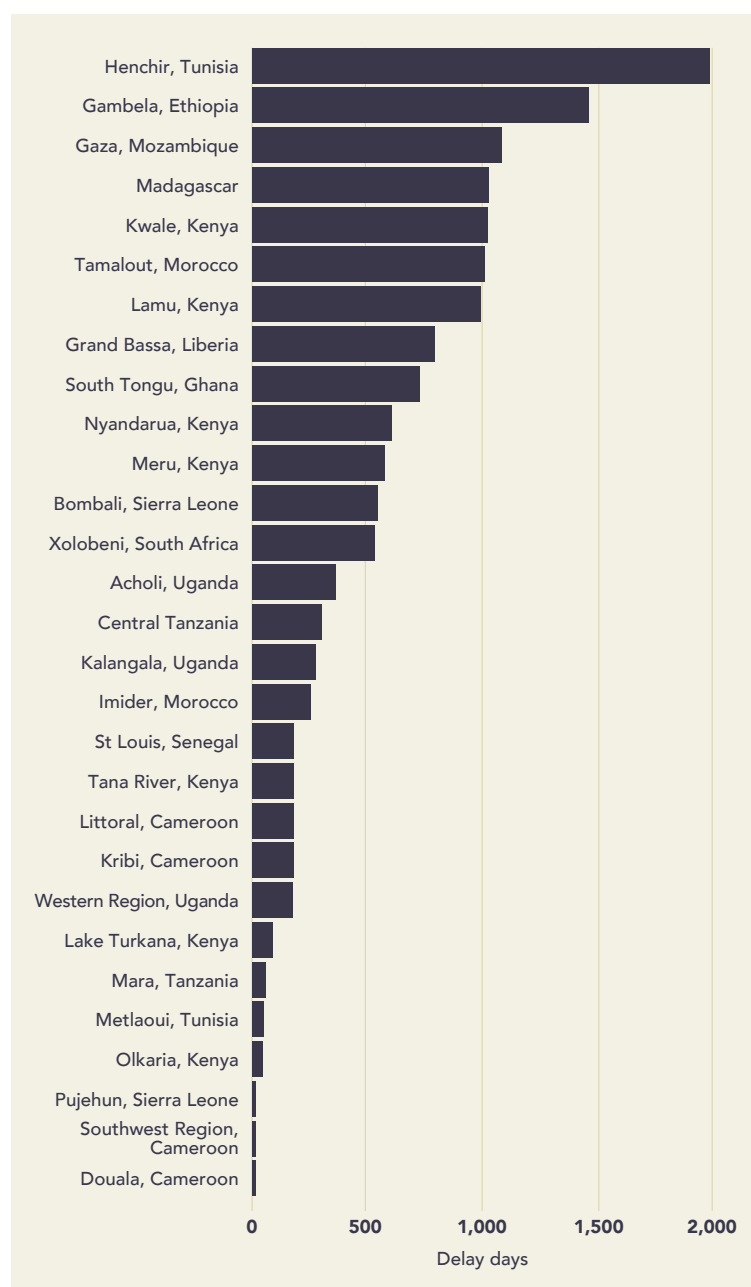
WHAT IS TRT?

The Tenure Risk Tool (TRT) is a discounted cashflow model that has been developed by TMP Systems using research conducted with ODI. This research effort found that tenure disputes create negative financial impacts for investors, primarily through the delays that they cause – in many instances these amount to years (see Figure A). To put these 1,000 day-plus delays in some context, Standard & Poor deems a delay of one month during construction or of just one day during operations a 'significant effect'.[1]

Despite the substantial financial impacts associated with tenure dispute, our consultation processes also revealed that investors of all stripes lack any formal means to assess or quantify tenure risk. As a result, investors rarely account adequately for tenure risk when they are making investment decisions. TRT was created to address this problem.

HOW DOES TRT WORK?

TRT relies on a simple discounting of cash flows over the maturity of an investment. The model calculates the internal rate of return and corresponding NPV for the investment, without factoring in any delays from tenure disputes. These serve as 'base case' values from which all changes based on assessment of tenure risk are measured.

The model uses our research on tenure-induced delay to generate a distribution of possible delays that a project in any given location might face if it becomes embroiled in a dispute. It then applies assumptions provided by the users (described below) to determine the impact that estimated delays might have on NPV under best, median and worst case scenarios. This assessment can inform investment decisions and justify resourcing better due diligence and local engagement processes.

As illustrated in Figure B, there is considerable variation in risk exposure depending on the location of the investment and the commodity involved.[3] Even under best case scenarios in safe countries, losses can reach $10 million, equivalent to 30% of the original projected NPV of a medium-sized oil palm investment.

TRT has a built-in function to enable users to stress test various scenarios by running randomised Monte Carlo simulations.[4]

INPUTS

TRT requires a number of user-defined inputs to calculate the tenure risk exposure of a particular project. These are:

1. **Uncertainty score**, which users get from Landscope using a project's GPS coordinates.[2]

2. **Start date**, which is the day that the investment or project will begin.

3. **Discount rate** that the user would like to apply to discount cash flows.

4. **Total revenue per period** or the expected annual revenue of the project.

5. **Total CAPEX per period** or the expected annual capital expenditures of the project.

6. **Total OPEX per period**, that is the expected annual operating expenditures of the project.

The model does not seek to account for macro-level factors like foreign exchange risk; rather, we assume that users have their own economic and financial forecasts and scenarios. TRT therefore focuses exclusively on quantifying the impacts of tenure disputes.

RESULTS

The model uses the estimated distribution of delays for a project to produce two adjusted cash flow scenarios, one for delays that occur during project inception and the other for delays which occur during project operations. These projections are then used to produce the minimum, median and maximum losses for two scenarios: disputes that start during establishment (for greenfield sites); and disputes that start during operations (for brownfield investments).

FIGURE B: RISK EXPOSURE AS A PERCENTAGE OF NPV BY COMMODITY AND LOCATION
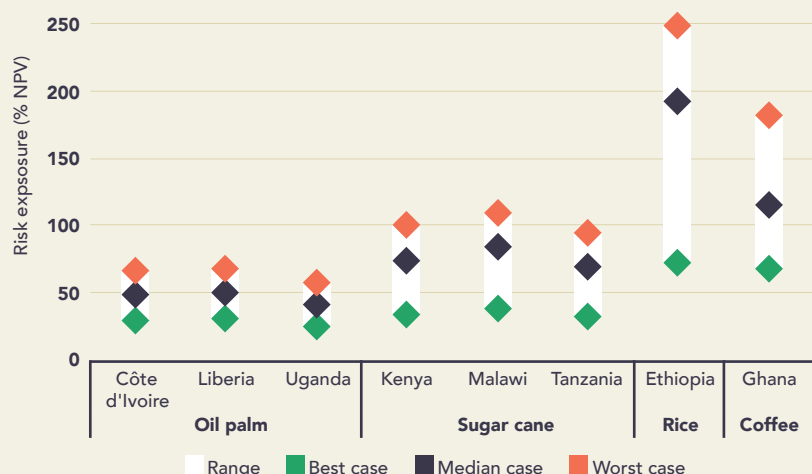
RECOMMENDATIONS

Investors struggle to assess tenure risk either at project or portfolio level. This means that they are making investments that they shouldn't, and missing out on investments that may be viable even though tenure risks are manageable. TRT allows investors to assess large portfolios rapidly. This can help individuals working at banks, funds and other financial institutions to persuade board members and shareholders that tenure issues are significant at a portfolio level. In light of increasing demand for 'ESG investments' and the importance of agricultural investments in achieving Sustainable Development Goal targets, TRT can unlock a range of responsible agricultural investment projects.

Our research suggests that managing operational risk in greenfield investments may require significant, early expenditure on processes like stakeholder mapping and consultation. Brownfield projects are frequently characterised by legacy land issues, which expose unknowing investors to historical but unresolved grievances. However, current financing arrangements typically do not allow for necessary upfront expenditure for identifying and mitigating tenure risk. Instead, companies are rushed into generating revenues as quickly as possible. Undertaking due diligence procedures to combat these issues can be challenging so it is important to have a financial rationale for this action, which TRT can develop.

1   Standard & Poor (2017) 'Project Finance Construction and Operations Counterparty Methodology'. New York: Standard & Poor

3   These coordinates are fed into the Landscope tool which uses available environmental, social and governance data as well as analysis of over 500 cases of tenure disputes to produce a location risk score or tenure risk score. This is very important because tenure risk varies significantly between locations, even at a sub-national level. See Annex III of the complete report on TRT for more details.

4   These results were generated using anonymised company-level data on OPEX, CAPEX and revenues. For further details, please see the full TRT report.

5   The model uses the SimVoi 3.08 add-in in order to run the Monte Carlo simulations and produce the required algorithms for randomisation. For more information, see: https://treeplan.com/simvoi/

THE QTR INITIATIVE

Quantifying Tenure Risk (QTR) is a joint research initiative from the ODI and TMP Systems funded by the UK Government. Our aim is to provide data and analysis to reduce land conflict and improve land governance through better informed investment decisions. QTR's initial focus is on Africa and agriculture, but plans are underway to expand to other sectors and regions.

ODI AND TMP SYSTEMS

The Overseas Development Institute (ODI) is the UK's leading global development think tank. ODI has an extensive body of research on land rights and an in-house team dedicated to agricultural policy. TMP Systems is an asset management and investment consultancy specialising in global development. ODI and TMP have discussed tenure risk with nearly 80 companies and TMP manages a database of over 500 cases of tenure disputes.

DATA SHARING AND CONFIDENTIALITY

We are improving, expanding and refining our discounted cash flow model and invite businesses to take part. By sharing your company data, you can contribute to a better investment environment for the industry as a whole. All data shared with the QTR initiative is anonymised and confidential. We are happy to enter into Non-Disclosure Agreements and can provide the necessary paperwork on request.

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