WATER IS THE NEW OIL

In a water-scarce world, water management in large-scale commercial African agriculture can significantly influence local and global investment trends. About 12 million hectares of land worldwide becomes degraded each year. Droughts and floods are becoming more frequent and larger. And for a host of reasons, Africa is at the eye of this storm.

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According to the Food and Agriculture Organisation of the United Nations (FAO), agriculture as a whole accounts for 70% of fresh water withdrawals globally. It is inherent in this figure, and no surprise to anyone even peripherally involved with farming, that agricultural operations are extremely vulnerable to water-related risk. However, the complex nature of these risks, repercussions and responsibilities is often underestimated. In Africa, where agriculture accounts for around two-thirds of all livelihoods and is 96% dependent on rainfall, these complexities are more obvious and urgent than anywhere else.

The risks associated with water use and management in Africa can be seen as three concentric layers: at the core is "local risk", or the immediate risk to our own operations if there is inadequate water; beyond this lies "regional risk", where our water use contributes to a cumulative impact on other water users downstream or within a catchment area; and surrounding all of these is "global risk", wherein we might be viewed as excessive water users in a world where millions of people are being displaced by anthropogenic droughts. Each of these layers presents challenges, but they also present incredible opportunities.

01/ LOCAL RISK

The risks of inadequate water for our own farming operations are the easiest to identify and mitigate against. Fit-for-purpose crops can be selected, water rights secured, and irrigation systems commissioned. Although no farming operation is immune to risk – as any farmer affected by the recent Western Cape drought will attest to – there are alleviation strategies that investors can apply in large-scale commercial African agricultural investments. Having a wide range of geographies and commodities available allows us to spread that risk; access to finance allows us to equip operations appropriately, and analysis of hydro-geological systems and climate information allows us to predict the level of risk to projects before we engage in them. In this way we can identify and mitigate the most basic form of water risk: simply whether lack of availability will affect production on our farms.

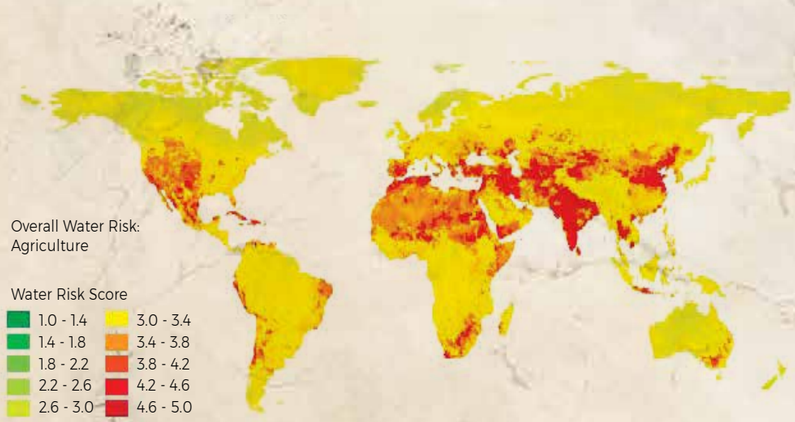
02/ REGIONAL RISK

The social and reputational risks, at a local or basin level, of consuming sufficient water to allow large-scale commercial agricultural enterprises to flourish add an additional layer of complexity. Environmental impact assessment processes undertaken by local practitioners, while often excellent in terms of local ecology and other aspects, may not fully explore the cumulative impacts of this consumption on all users within the catchment area or basin. As a consequence, dams or abstraction volumes may be completely authorised by local regulators but nonetheless have ruinous effects upon less formal agricultural or subsistence enterprises in the region. As investors in large-scale commercial agriculture projects, we have a clear responsibility to identify and consider the needs of the greater communities within which we operate, and to have resources at our disposal – including the water risk assessments promoted by the Principles of Responsible Investment (PRI) – to allow us to do so.

03/ GLOBAL RISK

Wider-ranging issues of social justice are inextricably linked with water use and availability. Though it has become trite to say that the next world wars will be fought over water, there are theorists who propose that this is already a reality. For example, the "aridity line" effectively demarcates the border of the desert in North Africa; the areas below it receive an average minimum of 200 ml of rainfall per year and are suitable for cultivation of crops, while the areas above it do not. Droughts (and various human efforts) shift the line backwards and forwards. The line moves downwards as the desert expands, exacerbated by climate change, and these shifts are characterised by conflict and displacement as pastoralists lose the ability to support themselves. In another case, though it is too simplistic to say that the Syrian civil war arose as a result of a lack of water, the internal displacement of 1.5 million Syrian people as a result of drought immediately before the war began cannot be

FIGURE 25: OVERALL WATER RISK FOR AGRICULTURE (CROPS) FROM WWF WATER RISK FILTER



Source: WWF 2018

Credit: Nasa

discounted as a contributory factor. Conflict, displacement and mass migration are all inextricably linked with drought and heat stress.

While the correlations between warfare and the aridity line provide a dramatic example of Western involvement in water-related conflicts, the numbers of victims of these conflicts are insignificant when compared to the multitudes of people directly victim to the various effects of climate change-related droughts.

04/ BEING WATER WISE

As agri investors we cannot single-handedly alter the contributions of the Western world to anthropogenic drought. However, we must, at the very least, acknowledge the additional weight of responsibility that comes from our promotion of a sector dependent on consumption of vast amounts of water. With this responsibility comes concrete opportunities for knowledge transfer and the creation of shared value.

Only 4% of Africa's agriculture is under irrigation, the rest of the continent relies on rainwater to grow crops; a perilous and fragile situation in our warming world. This year, the Eastern Africa Farmers Federation – which represents 20 million farmers in 10 countries – described the past two years as its most devastating, saying it could no longer depend on predictable rainfall and a stable water supply.

As a leading large-scale commercial agricultural investor with responsibility for an extensive and a growing African portfolio, we acknowledge the gravity of the world and local water situation we face. Embedded in our approach is our awareness of the need to balance essential food production requirements against water security requirements. Our strategy with respect to water resilience aims to help us meet our stewardship responsibilities not only to our investors, but also to the societies and ecosystems where we develop tailor-made solutions for every location where our farms are located. Water resilience strategies are tailored to every farm, taking into account local conditions as well as best practice water-saving initiatives for the specific agricultural sectors in question, and refined by using unique software applied in our frequent drone surveys. Water consumption per farm is monitored and reported on to investors in quarterly and annual reports.

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Given the scale of our commercial operations, it is incumbent upon us to help the continent move towards a more stable and robust situation vis-à-vis water management. This is a summary of the strategies adopted at the farms within our South African funds:

- Selection and planting of cultivars suited to water availability and soil types
- Planting of cash crops to act as "living mulch"
- Development of soil moisture management plans using, for example, neutron probes
- Optimised, efficient irrigation systems, including central computerised oversight and control
- Lining water storage dams to prevent seeping
- Installation of netting to reduce evaporation
- Flushing irrigation systems back into water sources
- Diversifying water sources – for example, combining borehole and surface water abstraction

05/ IT TAKES A VILLAGE

It is essential that African leaders, governments and institutions collaborate efficiently to achieve better water management. And to be more effective, collaboration must also be allowed to extend across national borders. The majority of African countries struggle to achieve effective domestic water management systems, and a lack of cross-border knowledge sharing and cooperation undermines these efforts even further; the "tragedy of the commons" is nowhere more evident than in shared water resources.

Thought leadership on the part of African governments, aided by specialist institutions such as the Observatory of the Sahara and Sahel (OSS) and South Africa's Water Research Commission (WRC), can lead to easing of red tape, and implementation of technology solutions. Without rapid and practical action, the effects of climate change will quickly translate into catastrophic water insecurity. Inaction is no longer an option.