

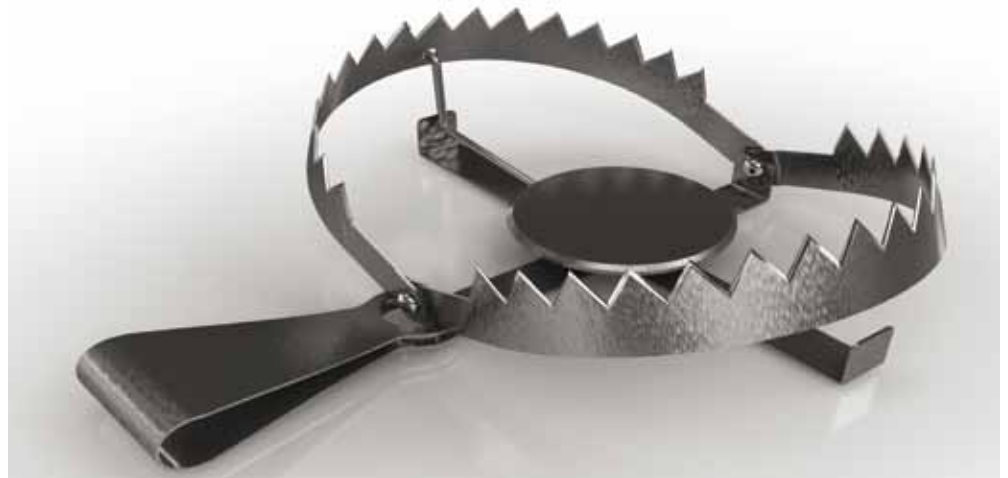
# THE ECOLOGICAL DEBT TRAP

## WHY UNDERSTANDING GLOBAL RESOURCE CONSTRAINTS HELPS PROTECT FAMILIES' WEALTH

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Many family offices and sophisticated endowments have made positive returns by early diversifying into real assets such as real estate, timberland or oil and gas engagements. Yet, this is not the end of the rope. We can only preserve and develop wealth once we understand all fundamental factors shaping the coming 15, 20 or 30 years. This is the realm of sustainability investing such as climate change, demographic shifts and resource scarcity.

One does not have to be of a particularly apocalyptic nature to worry about the state of global resources and natural cycles. The level of human intervention has



reached unprecedented scales. Even the normally cool-headed magazine *The Economist* issued a stern warning last year, titled: "Welcome to the Anthropocene".

It went as far as announcing a new, human-shaped geological age. Such are the impacts of our resource consumption and the risks of irreparable damages to ►

### SHOWCASE 1: INVESTMENTS INTO WASTE-TO-ENERGY BIOGAS

#### Fundamental Drivers:

- 1: (Supra-)national regulation driving the transition from fossil to renewable energy. According to experts the contribution of renewables to the global energy-mix will increase from current 5% to 30%-50% within the next 25 years.
- 2: Population growth as well as emergence of middle classes in the emerging markets spurring global energy demand.
- 3: Waste is closely linked to GDP development, urbanisation, and population growth. Global food waste alone is estimated at 1.3bn tonnes per year, i.e. roughly one third of all food produced (Global Food Losses and Food Waste, FAO 2011).

#### Business Case:

- Equity participation in waste-to-energy biogas plants is a straight-forward investment case:
- Revenues from collecting waste.
- Revenues from electricity generation and grid sale.
- Revenues from sale of waste fermentation residual (sulfates) as fertilisers.
- Technological requirements: high flexibility of biogas plant to digest a varying range of organic and non-organic inputs. Electricity production prices must be close to grid power parity to avoid

reliance on state subsidies. Highly experienced technology partner with a track record of 30 years and 200 established plants globally.

- Scalability: plants should exhibit industrial production capacities and have a direct grid-connection.
- Input supply: ensuring abundant supply of waste by cooperation with private and public waste disposal contractors.
- Geographical diversification: special focus on France, UK and the US where the regulatory frameworks to push biogas have been set.

#### Footprint

- CO<sub>2</sub>-neutral generation of energy.
- Complete utilisation cycle from waste over energy to fertilizer.
- No need for mono-cultural fiber production which stands in direct competition to food agriculture.

#### Investment highlights:

- Low correlation to financial markets.
- Inflation adjusted returns (via energy price) in excess of 15% p.a.
- Cash-flows to investors starting in year 2 (10% p.a.) after investment.
- Investment term: 3 to 15 years.

the very natural systems our lives depend upon.

## RESOURCE PRESSURES

We know the major forces at work: the world's population is predicted to grow to 9 billion. In many regions consumption of resources is growing even faster, the flip-side of the otherwise welcome reduction of poverty.

Global energy is on track to double by 2030. Here, for once, we don't focus on fossil but biological resources, offering less discussed but equally dramatic statistics. The WWF's 2012 *Living Planet Report* is only the latest in a series of reports highlighting the pressure humanity is putting on our planet. "We are using 50% more resources than earth can provide. By 2030, even two planets will not be enough," it states. This highly respected reference compares the Ecological Footprint Index, a measure of the biologically productive area we are using, with the Living Planet Index, which reflects the health of the planet's ecosystems. The former demonstrates that people are using the equivalent of 1.5 planets to support their activities, while the latter shows a decline of natural capital of 30% between 1970 and 2008.

We are of the firm belief a

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turning point has been reached. To de-leverage use of natural capital is becoming political priority as it is a rule of law stipulated by biology and physics. Hence, efficiency and

tant to accept that disruptions of unprecedented scale need to be factored in long-term valuations. Take soil erosion, for example, which is affecting land worldwide, jeopard-

*"We are using 50% more resources than Earth can provide. By 2030, even two planets will not be enough"*

regeneration are the two principles pointing the way forward. They are the critical mitigation drivers tackling the resource challenge, offering plenty of investment opportunities in many industries and world regions alike.

## INVESTMENT OPPORTUNITIES

The resource gap eventually affects all assets classes. Within equities and corporate fixed income we believe investments with the greatest long-term potential will be those where capital is directed into ventures that provide products and services that help reduce the resource gap.

Sovereign bonds and their credit quality are also increasingly affected by issues such as efficient policies for natural resource management or protection and regeneration of ecological capital

Equally for real assets, it is impor-

using the very agricultural base at the start of the food-value chain. Farmer incomes are coming down already and land values with them. Developments such as these require an expanded understanding of risk as the interconnectedness between financial (real) assets and natural capital increases. These factors need to be soundly understood by any investor considering buying land-or-forest.

## ALL TOGETHER

The current market environment favors investments with attractive real returns, low correlation to traditional asset classes, inherent inflationary hedges and attractive cash-flow yields. Sustainability trends impact future economic, political and regulatory frameworks and drive new business models and technologies. Sustainable real assets marry both aspects and are poised to deliver great results to long-term investors. ■

## SHOWCASE 2: INVESTMENT INTO SUSTAINABLE AGRICULTURE

### Fundamental Drivers:

- 1: Excessive traditional agriculture has led to an alarming degradation of global arable land (25% as per FAO report 2011).
- 2: In the 1960s a hectare had to feed two persons, by 2025 this number will have increased to five. At the same time, annual productivity gains have decreased from roughly 3% to less than 1% by 2005.
- 3: Continued population growth and changing diet habits will require an increase of 70% in agricultural production by 2050. This figure translates into additional production capacities of one billion tonnes of crops and 200 million tonnes of meat – annually.

### Business Case:

- Equity participation in a diversified portfolio of Australian farmland and sheep/cattle herds.
- Revenues from meat exports to Southeast Asia and China
- Revenues from operational efficiency increase (consolidation of small scale farms)
- Value appreciation from genetic improvement of sheep/cattle

- Value appreciation from land value increases
- Investment focus: pastoral farming directly caters to the changing diet/increasing protein demand of many Asians
- Geographic location: Australia exhibits ideal export pathways to Southeast Asia
- Scalability: Top 20% of farming operations exhibit up to 100% higher profitability than smaller farms
- Sustainable practices: manager's focus on resource efficiency, technological innovation, biodiversity and sustainable farming

### Footprint

- Sustainable farming practices
- Contribution to global food security

### Investment highlights:

- Low correlation with traditional asset classes
- Inflation adjusted returns in excess of 15% p.a.,
- Cash-flows starting in year 3 after investment (8% p.a.)
- Investment term: 7 to 20 years