



CCF is a Namibian non-profit incorporated association dedicated to the long-term survival of the cheetah and its ecosystems.

RESEARCH

CONSERVATION

EDUCATION



The Cheetah Conservation Fund (CCF) maintains the Biomass Technology Demonstration Centre (BTDC) at its Field Research and Education Centre to test, develop and produce clean-burning energy products made from sustainably harvested thorn bush. The objectives of having this facility are to catalyze a biomass industry while restoring encroached habitat and farmlands for wildlife and livestock grazing. With up to seven tons of woody thorn bush per acre, the central Namibia region is an ideal location to demonstrate the full economic potential of biomass and to research sustainable harvest methodologies. Bringing commercial enterprises to central Namibia has the combined benefits of creating much needed employment, generating power for areas that do not have electricity, reducing conflict between carnivores and farmers, and improving farmland productivity.

BIOMASS TECHNOLOGY DEMONSTRATION CENTRE

RESEARCH & EVALUATION

BTDC research encompasses a wide range of biomass technologies with an emphasis on those capable of generating sustained economic enterprises. Initial technology includes manufacturing of briquette logs, charcoal hex logs, lump charcoal, and for pyrolysis-based electrical generation. Phase two will include other promising technology, such as wood pellet production, alternative chipping power trains and Stirling engines.

CCF ecologists conduct long-term monitoring of harvested areas to provide detailed information on habitat recovery. The BTDC team evaluates new machinery and considers how harvest methods can be efficiently and cost-effectively scaled. Commercial biomass operations require large quantities of raw wood delivered at predictable intervals throughout the year, so matching input needs to harvesting equipment, methods and transportation is vital.

Other forms of renewable energy technologies that will be evaluated at the BTDC include photo voltaic (solar) systems, alternative battery and energy storage systems, and micro-grid deployments. As biomass industries expand in central Namibia, the absence of electrical power will be a barrier to success for many villages. It is likely that biomass-based electricity and solar electricity will both be important sources of energy for rural biomass industry, so the BTDC will investigate how to best implement small grids in rural areas.

BIOMASS AS A VIABLE BUSINESS

The BTDC draws on academics, researchers, and engineers to implement, evaluate and validate each technology, determining its suitability for the type of biomass available in the region. As required, equipment and processes are customized. Regular evaluations are made on the overall economic potential of specific industries to assure that cost of production is low enough to result in profitable end sales of biomass products.

Over the past decade, CCF has been leading the way in thorn bush harvest methods. CCF's bush project production of Bushblok is certified by the Forestry Stewardship Council (FSC), a standard that ensures products come from responsibly managed lands and provide environmental, social and economic benefits. This certification indicates the highest standard in forestry management.

With a wide range of installed operating equipment, tuned methods of operation, and a detailed understanding of cost economics and wood harvest methods, the BTDC is the ideal location to demonstrate biomass technologies. The BTDC attracts entrepreneurs, existing companies, international grant foundations, NGOs, and investors from all over the world. By connecting investment capital to businesses and sharing knowledge, the BTDC seeks to catalyze a new growth of biomass industry in central Namibia. With millions of acres of invasive bush, biomass will become a regional economic powerhouse, creating much needed jobs, new tax revenue, and improved livelihoods.



2018 Biomass Technology Day celebration held at CCF's newly finished Biomass Technology Demonstration Centre at CCF's Headquarters in Namibia.

A TEACHING FACILITY

The final role of the BTDC is education and training. The production floor and nearby classrooms at CCF are used to train workers on equipment operation, safety procedures, use of personal protective equipment, employment laws and other relevant topics. Live field training covers planning a harvest, safety in the environment, harvest equipment operation, and implementation of FSC-compliant methods. Community based businesses and entrepreneurs receive additional education on the economics of biomass businesses, distribution and transportation alternatives, and access to local and international capital. Additionally, the BTDC welcomes international and Namibia academic institutions for student education and as a base for continued research.

OUTLOOK FOR THE FUTURE OF BIOMASS

The potential of biomass is huge. With millions of tons of available thorn bush located in a region with high unemployment and little electricity, no other idea could have such an impact on central Namibia. CCF has studied the region for more than a decade. A sustainable, responsible harvest of excess thorn bush is not only possible, but highly desirable. CCF coordinates international donors and investors to fund and support the BTDC. Through continued research, demonstration of related technology and training, CCF intends to catalyze a new wave economic activity in Namibia focused on biomass.



Before harvest: CCF's habitat restoration efforts focus on clearing thickened thorn bush from cheetah habitat. While thorn bush is a native plant, due to the decline of large grazers, the plants become overgrown, clogging the landscape.



After harvest: The cheetah needs open landscape like this to successfully hunt. Research is being conducted on the effects thorn bush removal has on the soil composition and wildlife density.