

Biodiversity mainstreaming at ZZ2



ZZ2 is a South African farming enterprise operating mainly in the Limpopo Province, as well as in the Western Cape, Eastern Cape, Gauteng, North-West Province and Namibia. They produce tomatoes, avocados, onions, dates, cherries, apples, pears, stone fruit, blueberries, stud cattle and weaners. ZZ2 is a world leader in large scale, nature-friendly agricultural practices, also known and registered as Natuurboerdery®. Natuurboerdery® is defined as follows: “Farming in harmony with nature, while employing the best human science and technology.”

What is the business case for biodiversity at ZZ2?

Natuurboerdery® grew from of the realisation (through first-hand experience) that conventional, industrial agriculture is not sustainable, both economically and environmentally. Natuurboerdery® is founded in the open (living) system philosophy and takes fundamental insights from nature and apply these to agriculture and business.

What are the biodiversity impacts and dependencies of ZZ2?

Natuurboerdery® adopts a broad definition of its interactions with the environment, which include natural resources and humans and their activities. It is a holistic and inclusive concept, which has relevance to the entire value chain of agriculture, from the climate to the crop, the people living and working on the farms up to the consumers. Biodiversity is encapsulated in Natuurboerdery® concept, through the recognition of both the company’s dependencies and impact on biodiversity.



Figure 1: Large conservation areas and green belts amongst fields and orchards serve as a feeder area for fauna and flora.

What strategy and action plan have ZZZ adopted towards biodiversity?

Natuurboerdery® is the guiding principles to ZZZ's farming practices and encompasses the company's strategy and action plan towards biodiversity. Through the application of the concept, biodiversity is integrated throughout the business, from production through to packaging, marketing and sales. The focus, in terms of biodiversity, is on resource conservation and environmental sustainability of practices. The resulting practices include the following:

- Awareness and cognizance of ecosystem services: e.g., setting up green belts and nature reserves to conserve sufficient habitat for biodiversity and ecosystem service provisioning (e.g., water supply for crop farming) in the greater landscape;
- Water efficient irrigation technology;
- Specific land preparation to limit soil erosion;
- Organic amendments such as compost to maintain soil condition and fertility.
- Precision agriculture to utilize only the most productive areas for a specific crop, allowing less optimal places to remain or revert to natural vegetation;
- Crop and cultivar selection to best fit climatic conditions (limit the need for energy and pesticide inputs);
- Limiting pollution and negative environmental impacts:
 - Integrated Pest Management (IPM) techniques to reduce chemical pesticide use;

- Extensive use of biological pest control measures such as predatory insects and fermented plant extracts.
- Extensive use of biological material (such as compost, effective microbes and compost tea) as part of the plant nutrition programme.



Figure 2: ZZZ aims to be the benchmark of success in agriculture and to create sustainable value for all its stakeholders as a living, open system. – ZZZ Inspiration (vision)

In terms of biodiversity conservation, the company policy is to conserve the natural fauna and flora in areas that are unsuitable or unavailable for cultivation, which is estimated to be approximately 50% of the land ZZZ manages. Several large nature conservancies were identified and game-fenced resulting in the protection of 25 000 ha of land.

The ZZZ nursery currently includes a programme for growing indigenous trees, which are planted to restore disturbed greenbelts between farming activities. These greenbelts serve as wind breaks, erosion barriers, pollinators and natural enemies of pests.

Invasive species such as Eucalyptus and Wattle are combatted on a regular basis to protect mountain water catchment areas and to restore rare and unique indigenous mountain grassland and forests.

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