34 The way forward

The editors

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This book contains short and concise chapters written by experts coming from a wide spectrum of agricultural disciplines on a broad array of important constraints, technologies and policy options needed to transform agriculture. The book is divided into five parts:

- 1 the status of agriculture in Southern Africa
- 2 drivers and constraints
- 3 current technologies
- 4 emerging technologies
- 5 policies and processes.

These parts describe the main problems facing the farming community and suggest means to improve access to these technologies and thereby improve agriculture and food production in Southern Africa.

Farming is often seen as a simple straight forward process that includes, among other factors, soil cultivation, sowing of seed, fertilization, weeding, pest management, harvesting and grain storage. Agriculture is not that simple but is a highly complex system of interactions between man and nature. There are many forms of agricultural production and each has specific approaches and requirements to be effective. If certain tools are not available when needed, crop production suffers. The tools for improved levels of production, to name a few, are quality seed, high yielding varieties, fertilizer, mechanization, plant and animal pest management and access to markets. The complexity of agricultural transformation is shown in the word cloud in Figure 34.1.

To produce the food we eat, farmers must rely on the availability of natural resources i.e., rainfall, temperature, soil fertility and pest management. In addition, farmers need access to a large number of building blocks or production tools, that when used properly, can lead to a good harvest without negative environmental impact – or a sustainable form of agricultural production.

For the vast majority of small- and medium-size family farmers in Southern Africa these tools are either: unknown, not available or too expensive. Conversely, large family and commercial farms have access to these tools, and this is the reason for the discrepancy in yield between the two groups of farmers. The

Figure 34.1 The complexity of agricultural transformation

Source: Richard A. Sikora, made with permission of wordclouds.com, Zygomatic 2015

lack of land ownership, access to credit, proper agricultural extension services, training, access to markets and government support strongly limits their ability to farm effectively and help improve the food security issues impacting the region.

The authors of the chapters in this book outline specific problems that farmers experience during and after production across the entire food value chain. They then present current and/or emerging technologies that can be used to offset the impact of the biological and/or physical constraints that they face on a daily, seasonal and yearly basis.

Most important, the authors also outlined what policies need to be modified or newly developed by decision makers to make these technologies available to the farming community.

Therefore, a very important part of the book deals with improving policies and processes that are needed in order to stimulate the transformation of agriculture and thereby improve food production and food availability within a country.

The recommendations given by the 67 authors who compiled the chapters in this book are of course the opinions and visions of the authors themselves. They wrote these chapters with the objective of improving agriculture in Southern Africa. We, the editors, hope the recommendations in this book are examined by decision makers and that they have an impact in transforming agriculture in the future.

Any attempt by the editors to try and synthesize the information presented in these chapters into recommendations for decision makers was considered extremely difficult – and not what the editors had in mind from the start.

Instead, the book is seen as a handbook outlining the most important building blocks needed for improving agriculture at the small- and medium-size farm level over what is presently the state of the art.

If these tools are selected and combined in a logical framework that fits the agriculture uniqueness of each farming system of the countries of Southern Africa, and policies and processes are devised to support local farmers, then the concepts and tools presented in the book will lead to the improved food production levels that are needed in the future.