



LEADING AGRICULTURAL  
INNOVATION IN WEST  
AND CENTRAL AFRICA



**USAID**  
FROM THE AMERICAN PEOPLE

# User Guide

## Seed Forecasting Demand Tool

In this part we will proceed with the practical development of the various cases of use of the forecasting tool. These different cases of use follow the logical flow of information within the system.

### A. Inserting your data

Within the tool one of the first steps the user has to take is to capture his information. The information entered by the user will be used to generate prediction data and graphs.

To do nothing please follow these three steps:

- Step 1: First please launch the Seed Forecasting Tool. To do this please simply double click on the tool.  
  
PS: Please make sure you have Excel installed on your computer beforehand.
- Step 2: Once the tool is launched, click on the “Information” tab available at the bottom left of the window.
- Step 3: Once on the “Information” tab, please fill in the different fields you are asked to fill out and select the options that apply to your case.

### B. Understanding the fields

This tool, which is practical and simple, we wanted to have self-descriptive fields at the “Information” page. However some of these fields may require more detail for an easy understanding for the user. These reasons, for these specific fields, we have therefore designed small “Help Bubbles” in order to better guide the user.

To access these aid bubbles please follow these three steps:

- Step 1: First please launch the Seed Forecasting Tool. To do this please simply double click on the tool.  
  
PS: Please make sure you have Excel installed on your computer beforehand.
- Step 2: Once the tool is launched, click on the “Information” tab available at the bottom left of the window.
- Step 3: On this page please locate labels marked with a red sign at the top right of the box. Once these fields are located, please simply pass the cursor over these fields to benefit from the “Help Bubbles” that have been put in place.

### **C. Access the estimates generated**

Once your information is properly entered within the tool and the different options suitable to your use case have been properly selected, the tool will then use internal algorithms to calculate the different predictions of your use case.

To access the estimates generated by the tool, after filling in your data (see section 3.A), please simply click on the “Database” tab at the bottom left of the screen.

### **D. View your dashboard**

Because the human brain is more receptive to graphs and data representation than to numbers, the Seed Forecasting Tool integrates a visualization page within it that allows the user to better understand the predictions generated.

To access the graphs, curves and other representations generated by the tool, after filling in your data (see section 3.A), please simply click on the “Dashboard” tab at the bottom left of the screen.

### **E. Refresh the dashboard**

In some situations, entering new information within the tool may require a refresh of the dashboard for a correct representation of the data.

To refresh your dashboard, after filling in your data (see section 3.A), please follow the following two steps:

- Step 1: Please click on the “Dashboard” tab at the bottom left of the screen
- Step 2: Please click the refresh button or press the keys (Shift) + (F9) at the same time

### **F. Save your work**

The advantage of this tool is that it allows you to save your work for later reuse. To do this you need to save your work by following these three steps:

- Step 1: Once you’ve finished your work, you can click the “Save the File” button or press the keys (Ctrl) + (S) simultaneously to save it.
- Step 2: You’ll then see a new window open so you can select the location and name you want to assign to that file.
- Step 3: Please select the folder or location you want and the name you want to assign to your work and then click the “Save” button

### **G. Check for updates**

As the Seed Forecasting Tool evolves on a regular basis, it is recommended that you download the latest version as soon as it is available to take advantage of the new features and improvements introduced.

To do so please follow the following four steps:

- Step 1: Check the version of your tool by looking at the “Homepage” tab of the Seed Forecasting Tool.
- Step 2: Please connect to the internet and open your web browser (Google Chrome, Internet Explorer, Mozilla Firefox, Opera, Microsoft Edge, etc...)
- Step 3: Once the browser is launched please go to the following URL: <http://www.coraf.org/seedfor>
- Step 4: Download the higher version of the tool and start using it as a replacement for the previous version.

## H. Get help

The Seed Forecasting Tool has an integrated user guide within the system. To access it, please follow the following steps:

- Step 1: First please launch the Seed Forecasting Tool. To do this please simply double click on the tool. NB: Please make sure you have Excel installed on your computer beforehand.)
- Step 2: Once the tool is launched, click on the “Use Guide” tab available at the bottom left of the window.
- Step 3: Once on the “Use Guide” tab you can then browse through the different sections of the page.

If there is a need not covered by the documentation, please send us an email via the form available at the following URL and our teams will respond as quickly as possible: <http://www.coraf.org/contact-us/>

## 4. Focus on data captured

A basic challenge faced by the seed sector in Sub-Saharan Africa is lack of proper planning in seed production. This has resulted in most cases to over production or underproduction, both of which can cause serious financial consequences for a seed producer. Too much carryover and stock write-offs will be costly while a lack of seed not only means lost revenue but is also a source of frustration for the sales force and the dealer network.

Apart from the above, there are certain combination of special features in the seed industry that makes the accurate assessment of demand even more critical. Below is a summary of these features:

1. The long time required by the breeder to successfully develop a new product
2. The seasonality of production
3. The fact that production is subject to variables like climate change which are outside the control of management
4. The need for statutory controls and quality standards
5. The existence of a generation system - whereby the production in one year is the progenitor of the next
6. The limited ‘shelf life and loss of germination by crops over time

7. The high volume: low value ratio of some seed crops such as cereals which makes long-distance transport and long-term storage unattractive.

All the above mentioned makes the topic of seed demand forecasting a very essential one in a seed production endeavor.

#### A. Seed Demand Forecasting

The first step in demand forecasting is to determine the total seed requirement or target needed to be met to serve the needs of farmers for the crop of interest. This is called the potential seed demand. However, for effective planning, it is important to further determine the effective demand which is calculated by multiplying the total percentage of seed bought by farmers with the potential demand. The above is also known as the amount of commercial seed that is purchased by farmers.

Another important thing to take into account when calculating seed requirement, is the seed rate. The seed rate usually differs particular when considering a crop grown for grain or forage, planted on irrigated or dry land, or whether the crop sown directly or transplanted.

It is also important to define the various categories of seed that exist in the market, as an understanding of these segments will assist in the assessment of demand. Seed can be categorized as being:

- A. Grain retained on farm and used as seed
- B. Grain bartered for seed at village or neighbor level
- C. Grain sold as un-labelled seed bought from a market or trader
- D. Certified or labelled seed bought from the distribution system.

Local custom and practice may be such that grain is retained on farm for use as seed. Alternatively, farmers may replace seed every three to five years. Recognizing that grain of open pollinated crops will be retained by farmers for use as seed, it becomes imperative for operators of the seed industry to put in much effort as possible to ensure that more of the unofficially traded seed are converted to certified or labelled seed and sold to farmers for purpose of production.

#### B. The following are factors which usually affect seed demand

Demand, to the seed seller, is the quantity that buyers are willing and able to purchase at a particular price. This is called effective demand and is not the same as the potential demand. It is important to distinguish between the amount of seed farmers will actually buy and how much they would like to buy, or indeed how much the government would like them to buy. The total amount of certified or labelled seed sold may be quite a small proportion of the total potential demand or potential seed requirement. Therefore many factors have to be considered when assessing and forecasting demand. Some of these are:

- **The cropping pattern and intensity**

in this regards, attention should be given to issues such as extension of irrigation areas; development of double cropping systems and multiple cropping of intensively grown crops; competing crops; new crops; rotations

- **The seed type**

If it is open pollinated or hybrid; variations under different farming systems, such as irrigated or dry land, and category or class of the seed whether Breeder, Foundation or Certified seed

- **The climatic condition**

Special focus must be paid to the rainfall and temperature patterns

- **The demand for crop products**

whether products are demanded for commodity market; export; agro-industrial development use etc.

- **The market situation**

This include the commodity prices; yield levels; prices of seed and other inputs and farm costs; cost of growing competing crops

- **The disposable farm income**

Emphasis here should be on the levels of farm income; the amount a farmer will spend on seed; availability of credit etc.

- **The rate or level of adoption of new technology**

farming techniques; mechanization (precision drills use less seed); hybrids replacing non-hybrid varieties; adoption of new varieties and certified seed

- **The policy of government**

subsidies and other inducements such as price support and credit; privatization; extension programmes; import or export policy and duty levels

- **The crop cycles**

The frequency of good years and poor years; occurrence of natural disasters

- **The habits and traditions of the farming communities**

that is the socio-economic factors

- **The product performance**

comparison with e alternative varieties

- **Competitiveness**

the choice the farmer has of using alternative varieties and suppliers; how do the suppliers compare in terms of image, convenience of supply, customer support’?

- **Price**

how prices compare with alternative sources?

- **Promotion**

special promotion campaigns being planned

When an individual company or organization is estimating the market share which may be gained by its own products, product performance, competitive positioning, price and promotion are the most important factors which need to be taken into account. This will form the basis of sales’ forecasting and production planning.

### C. The effect of price and farm income on demand

In general, 'the higher the price the lower the quantity purchased', especially where there are substitutes available. In the case of seed, farmers can retain the grain of non-hybrid crops, switch from hybrids to non-hybrids or grow different crops.

In addition to price, farm income is the major limiting factor affecting what a farmer will spend on inputs. The farmer will have to balance the cost versus the benefit before being persuaded to spend money on inputs such as seed and fertilizers. Unfortunately, seed is often the one item that the farmer believes it is possible to save money on, even though less is usually spent on seed than on any other input. He will ask the questions: «What are the chances of getting a return on my investment?»-»Will the rains come?»-»What will the market be like for the produce? "It must be recognized that there are conflicting demands on farm income and the supplier of inputs is competing for that income.

Marketing and promotional campaigns are designed to persuade farmers that seed represents good value. Farmers often do not attribute value to seed since, in the case of grain, they think they are producing the very product which they are being sold. Thus it would seem to many farmers that they could just as easily replant their own grain.

### D. Demand forecasting techniques

Forecasting is the process of making projections of demand for products by examining past and present performance levels, combined with an assessment of available products and markets. This may be carried out within the government service or by individual companies in a purely commercial context. The following approaches can be used:

1. Target setting
2. Growth trends
3. Growth rates adjusted for new technology adoption
4. Sampling.

**Target setting.** This method is commonly used in developing countries where government is directly involved in planning and seed supply. In a centrally managed economy, targets are likely to be set at a national level and production plans fixed for each region.

In few cases where there is a more open economy and both the public and private sectors coexist in a well-developed seed industry, the government usually retain the seed coordinating function and has the ultimate responsibility for the security of seed supply. In this situation, the Ministry of Agriculture sets the targets and organizes meetings to establish the supply situation and production plans of the various organizations involved in seed production.

Companies may opt to set a target for an ideal sales level while, at the same time, recognizing that this is unlikely to be achieved and budgeting for a more achievable situation.

**Growth trends.** This approach is based on the assumption that the rate of growth of seed demand as seen in past years will continue. This may give unrealistically high forecasts and will depend on the stage of market development for improved seeds. Small increases in volume in the early stages of improved seed use will represent a large increase in percentage terms, which may not be possible to sustain.

**Growth rates adjusted for new technology adoption.** Using this approach a given region is considered on the basis of degrees of new technology uptake and the likely speed of change.

Each part of the region can then be categorized as 'low' to 'medium' or 'high' growth, better reflecting the overall situation.

Sampling. The accuracy of the above approaches can be improved if sample groups of farmers are questioned to gauge their anticipated demand for seed. This exercise is more reliable where there is a reasonable awareness of the benefits of using improved seeds.

#### **E. Growth trends used in a commercial context**

Historical sales can be examined to develop trend lines but the resulting projections must always be reviewed with the benefit of judgment and experience. Seasonal patterns and the variance between years need to be explained. Sales data from previous years should be examined by preparing a graph of monthly and cumulative sales and comparing them over different years. A graph of successive years gives the overall trend and should answer the following questions:

1. If the market is expanding or contracting?
2. If company sales are to be expanded in existing markets, shares will be taken from which competitors?
3. Are increased sales going to come from existing customers or from new ones'?
4. What products are being launched or phased out?

The sales forecast for each crop group is the total of individual variety forecasts. Thus each variety has to be considered as a different product line at different stages in its life cycle.

When forecasting demand, a certain percentage should not just be added to the previous year's figures as the previous year may not have been typical. It is necessary to create a market-based forecast involving people in the company, as well as those in the distribution chain. If a company expects to increase its sales by ten percent the dealers will need to plan accordingly. Demand forecasts prepared by dealers need to be discussed with them if they do not correspond to the company's forecasts. For instance, it is possible that a dealer was left with carryover stock as a result of a late delivery in the previous season. Alternatively, local conditions may not correspond to the wider picture in the company's area.

Presented below is a suggested step by step process that can be adopted in developing a seed production plan for actors in the seed industry.

1. Organization of regular planning meeting biannually involving the entire actors in the agricultural value chain from research to commercialization and consumption.
2. The individual representatives of relevant organization invited to such meeting must come with collected market intelligence data gathered during the season or the previous year. These figures are to be analyzed and refined to aid discussion in such convergence.
3. The size and segmentation of the market is first established for the product group under discussion with any changes, trends or special factors being noted.
4. The market volume in the current year is allocated to each competitor noting shares of particular varieties. As much information as possible has been collected about production and farmers' reactions to competing varieties. Information should also be available about the level of seed imports.

5. The forecast demand for individual varieties in the company's portfolio is then considered in the light of pricing, the dealers' comments on whether the varieties are 'as good as' or 'better than' the competition, the dealers' commission structure and planned promotional activities.

It is important to note that all stakeholders in the seed value chain including, government organizations, private organizations, multinationals, projects and relevant donor agencies need to be involved and contribute to the process. It is important that the relevant agency coordinating seed activities apart from gathering its own data, gathers information from farmers, other public/private organizations and associated businesses, such as chemical and fertilizer companies, to provide greater accuracy in forecasting.

## **5. Conclusion**

Through this simple user guide, we have exposed all the different parts of the tool as well as the interactions between them. This tool, which is intended to be simple and easy to use, far from being limited to these features, will be enhanced with new modules and will follow a process of constant improvement. The final objective is to make this crucial tool for the development of the seed sector always simpler and more exhaustive.

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For any need do not hesitate to contact us via the following page: <http://www.coraf.org/contact-us/>