1. General Information about the Farmer

1.1 Name:

1.2 Age:

1.3 Location (Village/Region):

1.4 How many years have you been growing maize?

1.5 What is the size of your maize farm (in acres/hectares)?

1.6 What type of maize varieties do you grow?

- Local varieties
- Hybrid varieties
- Genetically modified varieties
- Others (specify)

2. Knowledge about Maize Lethal Necrosis Disease (MLND)

2.1 Have you ever heard of a disease called Maize Lethal Necrosis Disease (MLND)?

- Yes
- No

2.2 How did you learn about this disease?

- From other farmers
- Agricultural officers
- Media (TV, radio, newspaper
- Others (specify

2.3 Have you ever been trained or educated about maize diseases, including MLND?

- Yes
- No

2.4 If yes, who provided the training?

- o   Government extension services

- o   Non-governmental organizations

- o   Agricultural companies

- o   Other farmers

- o   Others (specify)

2.5 What do you think causes this disease? (Open-minded to capture local beliefs or information sources)

2.6 Can you describe the symptoms you've noticed on your maize crops that you suspect to be related to this disease? (Look for keywords like wilting, discoloration, rotting, etc.)

3. Incidence and Spread of the Disease

3.1 Have you ever experienced maize lethal necrosis on your farm?

- o   Yes

- o   No

3.2 If yes, when did you first notice the symptoms?

- o   This season

- o   Last season

- o   Over 1 year ago

3.3 How widespread was it on your farm?

- o   A small portion (less than 25%)

- o   Moderate portion (25-50%)

- o   A large portion (over 50%)

3.4 How quickly did the disease spread among your crops?

- o   Slowly (weeks/months)

- o   Rapidly (days)

3.5 Have you noticed any specific patterns or triggers that seem to precede the outbreak of MLND? (e.g., specific weather conditions, soil conditions, previous crop types)

3.6 Are there any neighboring farms that have experienced similar issues with MLND?

- o Yes

- o No

3.6.1 If yes, how close are these farms to yours?

- ▪ Very close (within 1 km)

- ▪ Moderately close (1-5 km)

- ▪ Far (over 5 km)

4. Current Control and Management Practices

4.1 What measures did you take to manage or prevent the spread of the disease?

- o Removed affected plants

- o Applied pesticides

- o Applied organic solutions

- o Did nothing

- o Others (specify)

4.2 How effective were these methods in controlling the disease?

- o Very effective

- o Somewhat effective

- o Not effective at all

4.3 What do you do with the affected plants (do you burn them, throw them away, leave them in the field, etc.)?

4.4 Do you use any specific varieties of maize seeds that are resistant to MLND?

- Yes

- No

4.4.1 If yes, which varieties do you use?

4.5 How frequently do you scout your maize fields for signs of diseases?

- Daily

- Weekly

- Monthly

- Less often

5. Farming Practices Related to MLND

5.1 How often do you rotate your maize crops?

- Every season

- Once a year

- Rarely

- Never

5.2 What other crops do you grow besides maize?

5.3 Where do you get your maize seeds from?

- Local market

- Certified seed companies

- Saved from last harvest

- Others (specify)

5.4 How often do you apply fertilizers or other chemicals (like pesticides) to your maize?

5.5 How do you manage the residue of previous maize crops?

- Burn it

- Plow it into the soil

- o Leave it on the surface

- o Remove it from the field

5.6 What irrigation practices do you follow?

- o Rain-fed only

- o Drip irrigation

- o Furrow irrigation

- o Others (specify)

6. Observations and Patterns

6.1 During which season(s) do you notice the disease more frequently?

- o Rainy season

- o Dry season

- o All year round

6.2 Do you notice any specific environmental conditions that seem to be related to the appearance of the disease? (e.g., after heavy rains, droughts, etc.)

6.3 Have you observed any particular pest or insect infestations that coincide with MLND outbreaks?

- o Yes

- o No

6.4 If yes, which pests or insects?

6.5 Are there any specific soil types or conditions that you think are linked to the disease? (e.g., sandy soil, clay soil, low fertility, etc.)

7. Economic Impact of the Disease

7.1 How has the disease affected your maize yield?

- o Significant reduction (over 50%)

- o Moderate reduction (25-50%)

- Slight reduction (less than 25%)
- No noticeable impact

7.2 How much money (or percentage of your income) have you lost due to this disease?

7.3 How much do you spend on managing the disease (e.g., buying pesticides, hiring help)?

8. Potential for App Use

8.1 Do you own a smartphone?

- Yes
- No

8.2 Would you be interested in using a mobile app to help detect and manage maize diseases?

- Yes
- No

8.3 What kind of advice or information would you like to receive from an app about maize diseases? (Open-ended, look for advice about disease detection, treatment, weather alerts, seed recommendations, etc.)

8.4 What features would you find most useful in a disease detection and management app?

- Image recognition for disease detection
- Treatment recommendations
- Weather forecasts
- Pest management advice
- Community forum or support
- Others (specify)

8.5 How often would you use an app that helps manage maize diseases?

- Daily
- Weekly

- Monthly
- As needed

9. Additional Information.

9.1 What other challenges do you face as a maize farmer in relation to plant diseases?

9.2 Do you receive any support from the government or agricultural agencies regarding disease management?

Closing Question

- **9.3 Would you be willing to receive follow-up visits or calls to further discuss your experience with this disease?**

  - Yes
  - No

Advice and Solutions Section (for App Integration)

10.1 What type of advice do you find most helpful when dealing with crop diseases?

- Immediate actions (removal of plants, spraying, etc.)
- Long-term prevention (crop rotation, seed quality, etc.)
- Both

10.2 How would you prefer to receive information and recommendations from an app?

- Text messages
- Notifications within the app
- Email
- Voice messages
- Others (specify)