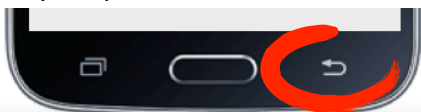


Troubleshooting

If you have problems using **MNM**?

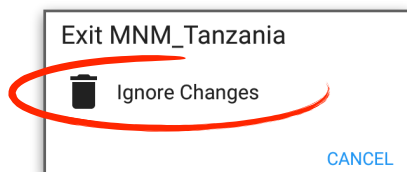
1) Stopping without saving

Any **Maize-Nutrient-Manager** advice session can be stopped at any time, by first selecting the back-key below your phone's screen:



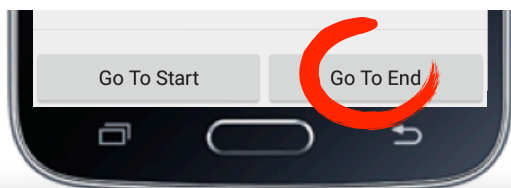
and then: **Ignore Changes**.

You will loose all info of the advice session and end **Maize-Nutrient-Manager**.



2) When **MNM** looks different after start

If you see, after starting, big text, no pictures, and **Go To Start** and **Go to End** buttons at the bottom of the screen, something went wrong during your previous advice session.



Select: **Go to End**, and **Save Form and Exit** or, if you first get other questions to answer, select the back-key and **Ignore changes** (see above), before starting a new advice session.

Getting help

If you have problems using the **Maize-Nutrient-Manager** application, contact the Whatsapp group and ask your question. You can also send a *WhatsApp* message or *phone* Mukoma Kilakila.



MNM-Tanzania
Whatsapp group



Mukoma Kilakila
0765105980

Tanzania Agricultural Research Institute
TARI-UYOLE
P.O.Box 400, Mbeya, Tanzania

in collaboration with
NWO-Wotro GCP4 Scaling readiness project
CCAFS - Crop Nutrient Gap project



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Maize



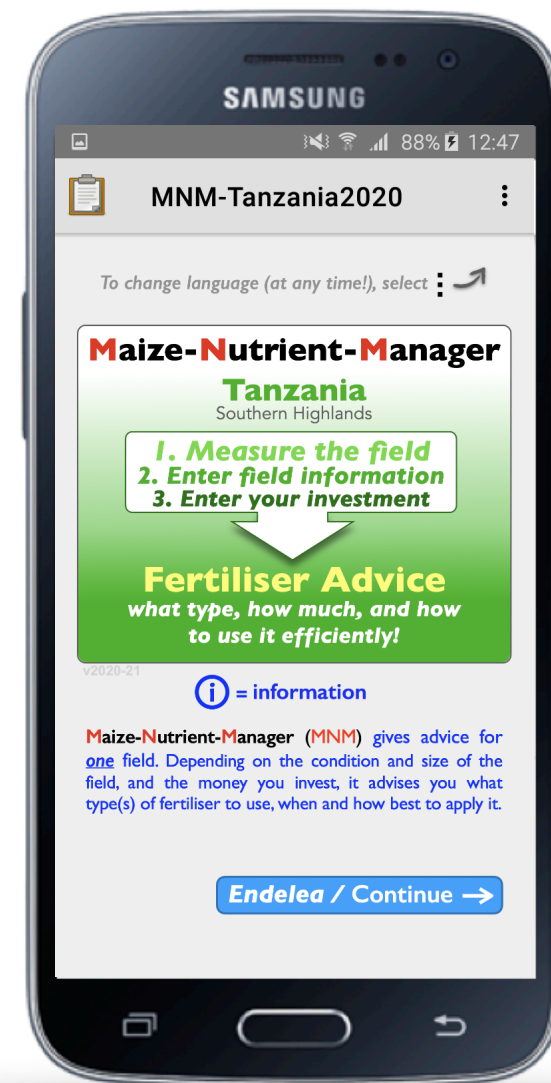
WAGENINGEN
UNIVERSITY & RESEARCH

Maize-Nutrient-Manager Tanzania

Southern Highlands

Mbozi and Momba districts

USER MANUAL



Maize-Nutrient-Manager

Field-specific advice for maize growers

Maize-Nutrient-Manager (MNM) gives balanced nutrient and fertiliser management advice for **one** field. Depending on the condition and size of the field, and the money the farmer can invest, it advises *what type(s)* of fertiliser to use, *how much*, *when*, and *how best* to apply it.

MNM generates advice on the basis of three types of information:

1. **Field measurement** - *Using the phone's in-built GPS, it measures the field on which the farmer plans to grow maize this season;*
2. **Field conditions** - *MNM records slope, landscape position, and the soil texture of the field;*
3. **Field management** - *MNM records how the field was managed in the past season, recording key information about fertiliser and crop management, such the previous crop, the fertiliser types and quantities used, their time of application, and the harvest that the farmer achieved.*

This information is used to provide the farmer with a *field-specific advice*, tailored to his/her specific field situation and capacity to invest.

A learning tool

MNM is not yet a finished app, but a tool to learn. By recording what different farmers do and what they harvest, we can learn how to improve the advice and the best way to deliver it.

How the app works

From **Start** to **Save Form and Exit**

You start **MNM** from the home screen, selecting:



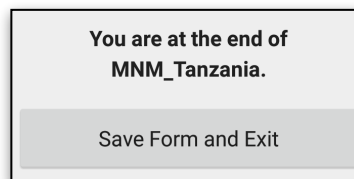
MNM_Tanzania2020

Once you started an advice session, you just answer the questions on the screen, together with the farmer - *you interview the farmer with the MNM-application*. After answering a question the application automatically progresses to the next question. Sometimes you have to select:

Endelea / Continue →

You can always go back to a previous question in the app (to correct answers or to choose another option) by *swiping to the right*.

Every time you finish an advice session, you select **Save Form and Exit**:



This is the last screen of any advice session. Only after you selected **Save Form and Exit** (which also ends the **MNM** app), you can start a new advice session for another field area and farmer. You can start **MNM** again from the phone's home screen.

Switch language any time!

MNM is in Swahili *and* English

You can change language at any time when using **MNM**. On any screen in the app, in the top right part of the screen, you can select:



Then select **Change language**, and choose:

Change Language

☒ English (en)

☐ Swahili (sw)

CANCEL

You can switch back the same way!

Farmer Advice forms

Writing **MNM** advice for the farmer

When giving advice, **MNM** will tell you when to write information on a **Farmer Advice Form**. You will see this blue text:

COPY THIS ADVICE TO THE ADVICE SHEET

Leave the Advice form with the farmer and ask him/her to record what is done in the maize field during the season, such as *types and kg fertiliser used, when applied, weeding, spraying, etc.*

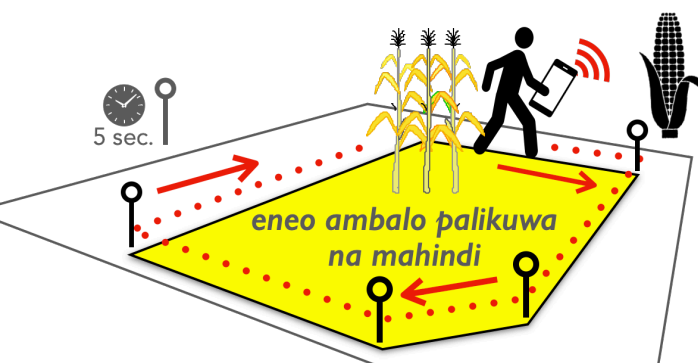
Ask the farmer to look during the season if the maize in his/her **MNM**-field has P or K deficiencies, using the pictures on the form.

Measuring the *harvested* area Previously **MNM**-advised farmers & maize fields

Farmers who got a **MNM**-advice last season, and farmers who grew maize on the fields they want advice for, will first be asked to measure the **harvested area**, which is the area of the field where the farmer planted the maize in 2019.

Note! The harvested maize area can be smaller than the whole field, or bigger/smaller than the area that was measured last year.

HARVESTING:



After measuring the **harvested maize area** on the **MNM**-advice field of the 2019-20 season, the farmer will be asked about the harvest of this field.

Fill out the harvest of the **MNM**-field in **Gunia** (bags of 110 kg) and the application will calculate the yield of this maize field.

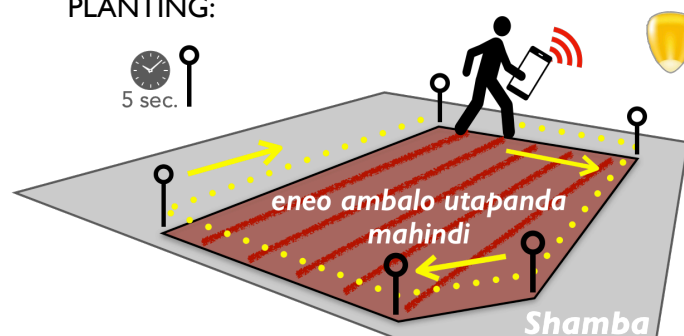
After measuring the harvested area and last year's maize yield, **MNM** will provide new advice for the same field, or a different field.

Measuring the *planting* area For all **new MNM**-advices

If a farmer wants an **MNM** advice for his maize field, the *app* will always ask you to measure the area of the field where maize will be planted.

Maize-Nutrient-Manager will measure the **planting area**, which is the area of the field where the farmer will plant maize this season (2020-2021).

PLANTING:



Tanzania Agricultural Research Institute
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Maize-Nutrient-Manager **Tanzania** Southern Highlands

FIELD MEASUREMENT using the phone's GPS



Measuring field areas with Maize-Nutrient-Manager

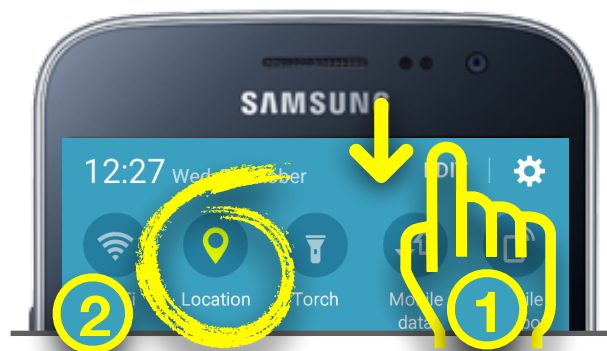
To find out the field's performance (yield) and to estimate how much fertiliser and seed is needed, the size of the field needs to be known.

Maize-Nutrient-Manager uses the phone's GPS (global positioning system) to measure field areas.

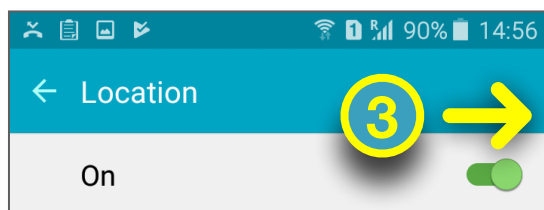
Setting the phone's GPS

When using **Maize-Nutrient-Manager** in the field, make sure the phone's **battery is charged**. When you start an advice session, put on the GPS of the phone. You do this by:

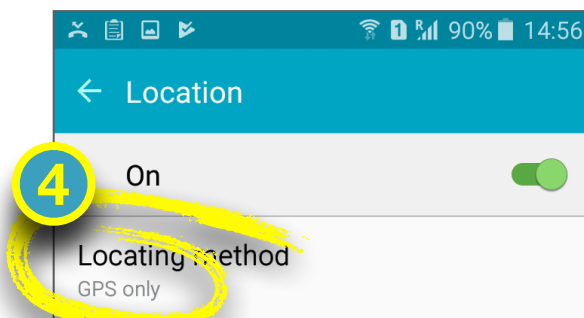
- (1) **Swipe-down** from the top of the **start-screen**;
- (2) **Press Location** for 3 seconds



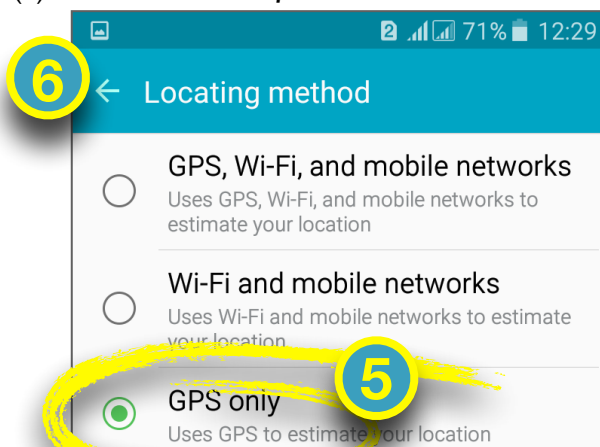
- (3) **Switch on: Location**



- (4) If needed, **press: Locating method**



- (5) Select: **GPS only** (otherwise the GPS is slow in the field)
- (6) **Press the arrow-left** to return.



Note!

In case you get the question:
Improve location accuracy?
Select: **DISAGREE**

Now you are ready to use **MNM** and all its features.

(After you have finished a **MNM** advice session, you can switch-off location to save the phone's battery power)

Measuring a field area GPS settings for field measurement

Measuring a harvested maize area or an area where maize will be planted, is easy. **MNM** will show you instructions. This is what you do:

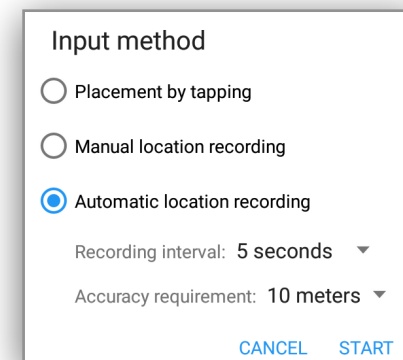
- (1) **Swipe down** to the bottom, on the screen
Phone settings for field measuring and select:

Start Geoshape

- (2) On the next screen, in the **top-right of the screen**, select:



- (3) Set the **Input Method** screen like this:



Automatic
5 seconds
10 meters

- (4) Start walking the **EXACT BOUNDARY** of the field area you need to measure (see next page);
- (5) As you walk, **keep your finger on the screen**. This prevents the screen from sleeping (which disturbs your measurement)
- (6) **Stop for 5 seconds at every corner** of the harvested area;
- (7) When back where you started walking, select at screen-bottom:



- (8) Then select: **Endelea / Continue →**