# Estimating minimum nutrient (N,P,K) requirements for climate-smart intensification of maize cropping

**Project Title:** P250 - Bringing CSA practices to scale: assessing their contributions to narrow nutrient and yield gaps

**Description of the innovation:** Building upon the innovation of 2017 for minimum N requirements, we now extended the approach to minimum N, P and K requirements for defined target yields of maize crops. Results are publicly available on www.yieldgap.org and methods and applications have been published (Global Food Security). Both IFA and Yara are very positive about this innovation and use it in their work in SSA to define nutrient requirements for climate-smart intensification. See Evidence and Outcome.

**New Innovation:** No

<table>
<thead>
<tr>
<th><strong>Stage of innovation:</strong> Stage 4: uptake by next user (USE)</th>
<th><strong>Innovation type:</strong> Research and Communication Methodologies and Tools</th>
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**Geographic Scope:** Regional

**Region:**
- Sub-Saharan Africa

**Outcome Impact Case Report:** 2627 - Fertilizer industry uses Global Yield Gap Atlas (GYGA) for long term minimum nutrient requirements estimates targeting enhanced productivity and minimum GHG emissions

**Description of Stage reached:** The results of minimum N, P and K requirements for defined target yields are now available on the Global Yield Gap Atlas (www.yieldgap.org) and have been published in a peer reviewed paper (Ten Berge et al., 2019. Global Food Security, in press).

**Name of lead organization/entity to take innovation to this stage:** IFA - International Fertiliser Association

**Names of top five contributing organizations/entities to this stage:**
- YARA
- SUA - Sokoine University of Agriculture
- EIAR - Ethiopian Institute of Agricultural Research

**Milestones:** No milestones associated

**Sub-IDs:**

**Contributing Centers/PPA partners:**
Evidence link:

Deliverables associated:
- D1863 - 1.2 Maize crop nutrient input requirements for food security in sub-Saharan Africa (https://tinyurl.com/y3vk8cjr)
- D1864 - 1.3 Maps of nutrient gaps for different percentages of yield gap closure for project countries (https://tinyurl.com/y3m6xlv5)

Contributing CRPs/Platforms:
- CCAFS - Climate Change, Agriculture and Food Security
- Maize - Maize