



# Investment requirement in Agricultural Research and Extension (2010-2025) to achieve Zero-Hunger and adapt to climate change<sup>i</sup>

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## Botswana

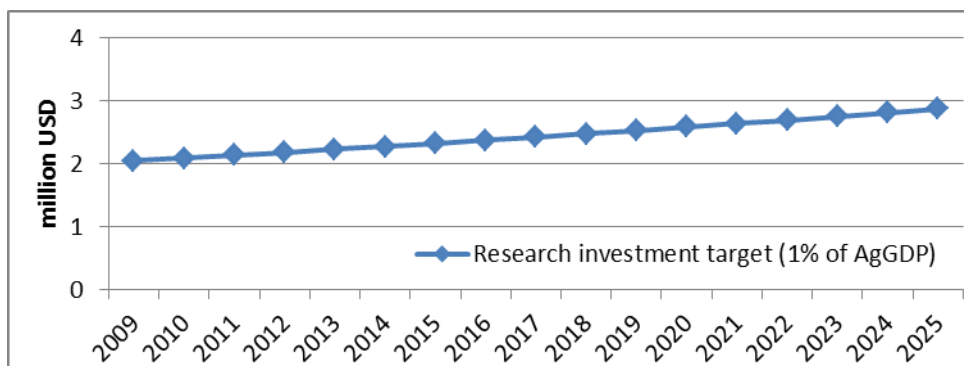
A recent FAO survey on the Current Investment in Agriculture (FAO/IAP, 2011) in 94 countries revealed that annual investments in agricultural research and extension in developing countries are often lagging far behind the required level to meet the Zero Hunger Objectives in most developing countries. This study links with a previous FAO investment report (Roseboom, 2004) that followed the general recommendation to set research investment targets in developing countries at 1% of the agricultural GDP. However, we challenged the 1% investment target for extension given the different conditions in the developing countries. In order to define proxies for country-specific extension investment targets, the authors developed an extension investment model (EIM) based on socio-economic macro indicators (poverty/undernourishment, access to information and population density) and a method to define estimates for cost increases related to climate change. This brief provides country specific targets and projections on investment.

## RESEARCH

### Current investment capacity- FAO Investment Assessment Survey (2009)

Current number of research agents	..
Current annual investment in research (million USD)	..
Current annual investment in research (% of AgGDP)	..

### Investment targets for agricultural research (2010-2025)



## EXTENSION

### Investment targets for agricultural extensions (2010) - FAO Extension Model Results

	Zero-Hunger Scenario	Climate Change Scenario
Number of extension agents	377	508
Average cost per agent (USD)	10,935	11,204
Annual expenditure (million USD)	4.12	5.69
Annual expenditure (% of AgGDP)	2.01	2.78
Number of rural people (aged 15-65) per extension agents	1,290	956
Agricultural Climate Change Vulnerability Index	..	246

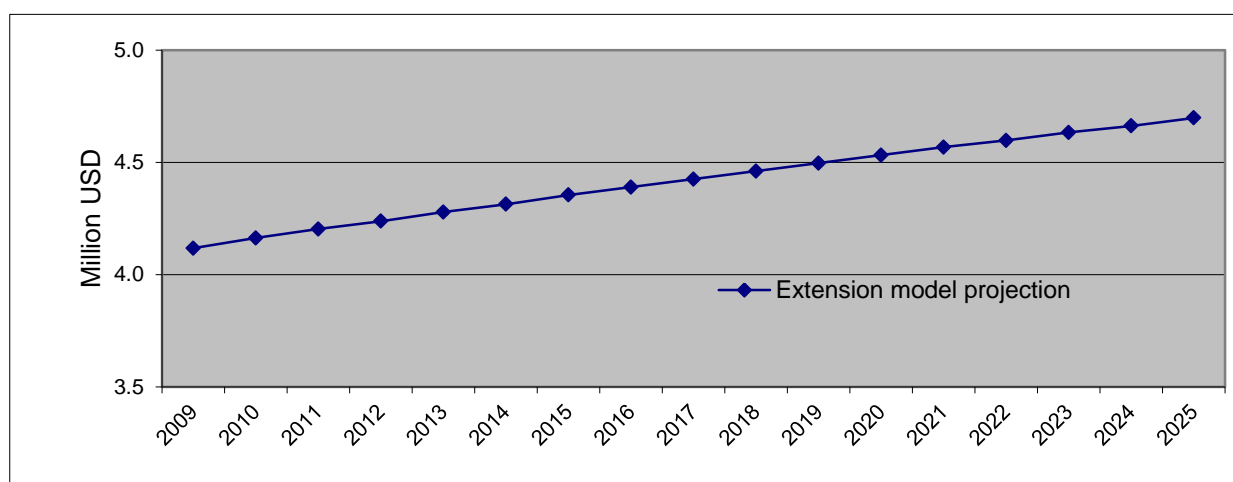
### Current investment and extension capacity- FAO Investment Assessment Survey (2009)

Current number of extension agents	..
Current annual investment in extension (million USD)	..
Current annual investment in extension (% of AgGDP)	..

### Country data used in the model (2009)

Agricultural GDP (million USD) (FAO)	205
Rural population (aged 15-65) (FAO)	485,725
Population density (people per sq. km) (Worldbank)	3
GNI per capita PPP (current international \$) (Worldbank)	13,620
Poverty headcount ratio (PPP) at 2\$/day (% of population) (Worldbank)	..
Prevalence of undernourishment (% of population) (Worldbank)	25
Internet users per 1000 people (Worldbank)	53
Mobile phone subscription per 1000 people (Worldbank)	780
Radio per 1000 people (World Resources Institute)	734

### Extension investment projection (2010-2025) to meet Zero-Hunger Objectives



<sup>i</sup> The views expressed in this information product are those of the author(s) and do not necessarily reflect the views of FAO.  
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