



The potential for scaling climate services to the whole of Zambia through the Participatory Integrated Climate Services for Agriculture approach

Introduction

This document outlines how a proven and effective, climate service can be scaled to support farming households in the whole of Zambia. Participatory Integrated Climate Services for Agriculture (PICSA) has proved successful in stimulating innovation and change in multiple countries in sub-Saharan Africa, as well as globally. This learning brief proposes a plan for sustainably scaling PICSA to contribute to the transformation of small-scale agriculture in Zambia.

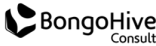
Purpose

The purpose of this learning brief is to outline the potential for the development and implementation of climate services in rural Zambia and across the region. The brief includes a basic plan for scaling the PICSA approach for the whole of Zambia and then presents findings from a cost-benefit analysis undertaken by the project Climate Risk Analysis for adaptation planning in sub-Saharan Africa (AGRICA). AGRICA is implemented by the Potsdam Institute for Climate Impact Research (PIK) in cooperation with the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH on behalf of the German Federal Ministry for Economic Cooperation and Development (BMZ).

The AGRICA study modeled the impact of this PICSA scaling over the next 27 years, until 2050, under a number of possible climate scenarios.

Participatory Integrated Climate Services for Agriculture (PICSA)

PICSA is a farmer-centric climate services and agricultural extension approach. The approach involves a set of logical steps that support small-scale farmers to make their own decisions and plan what is best for their individual farms (Figure 1). Using a set of participatory tools, and supported by agricultural field staff or lead farmers, each farmer considers their existing resources and activities, before working with their peers to explore and analyse historical climate information (rainfall and temperature) and then identify potential crop, livestock or other livelihood options to address the challenges they face. Once farmers have identified options they are interested in, they evaluate and plan these options in detail for their individual farms and households to build sustainable coping and adaptation strategies. The approach also integrates seasonal and short-term forecasting just before and during the season; farmers utilize these forecasts to adapt their plans and make shorter-term decisions.



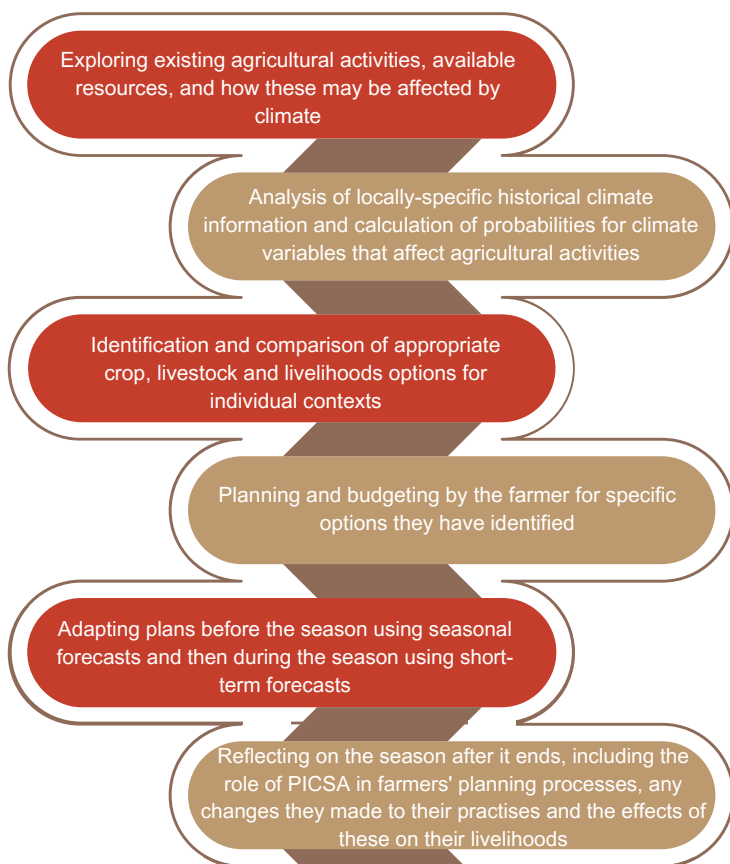


Figure 1: Flow chart of the PICSA approach process (Adapted from: Clarkson et al. 2022)¹

The plan for implementation outlined in this document includes the digitally supported version of the PICSA approach (E-PICSA) which provides opportunities to improve effectiveness and scale. E-PICSA is currently being co-developed and implemented in selected districts of Zambia and Malawi by the project Digital Climate Services for Smallholder Farmers, of the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) in cooperation with the University of Reading on behalf of the German Federal Ministry for Economic Cooperation and Development (BMZ).

E-PICSA will:

1. Enable up-to-date local climate information (historical and forecasts) to be immediately available for decision making
2. Include interactive digital tools to support farmer decision-making
3. Provide access to information on innovations.

Scaling opportunities and process

A basic plan to scale PICSA to all extension workers in Zambia is presented here (Figure 2). The trained extension workers will cascade PICSA to all locations in the country. The plan is developed to:

- Ensure that PICSA implementation is sustained and refresher trainings continue for field staff and farmers ahead of each season
- Scale PICSA to all agricultural camps in all districts
- Ensure that core principles that underpin PICSA and have led to its success are maintained
- Sustain the quality of training of experts, extension workers and farmers
- Ensure that continued, routine provision by Zambia Meteorological Department of locally specific
- historical and forecast climate information for use in PICSA
- Support full integration and ownership by Zambian institutions including effective monitoring and evaluation.

The process involves several stages of training:

- Building the capacity of a team of expert PICSA trainers
- Supporting those expert PICSA trainers as they cascade the training to Camp Officers and other field staff through a series of training-of-trainers workshops
- Within two years, all extension workers in Zambia can be trained by PICSA experts
- Those extension workers each train 50 new farmers each year and will reach more than 1.2 million farming households in the first ten-years of implementation
- This process involves refresher training for extension workers in their second year of implementation and then every 5 years after that.

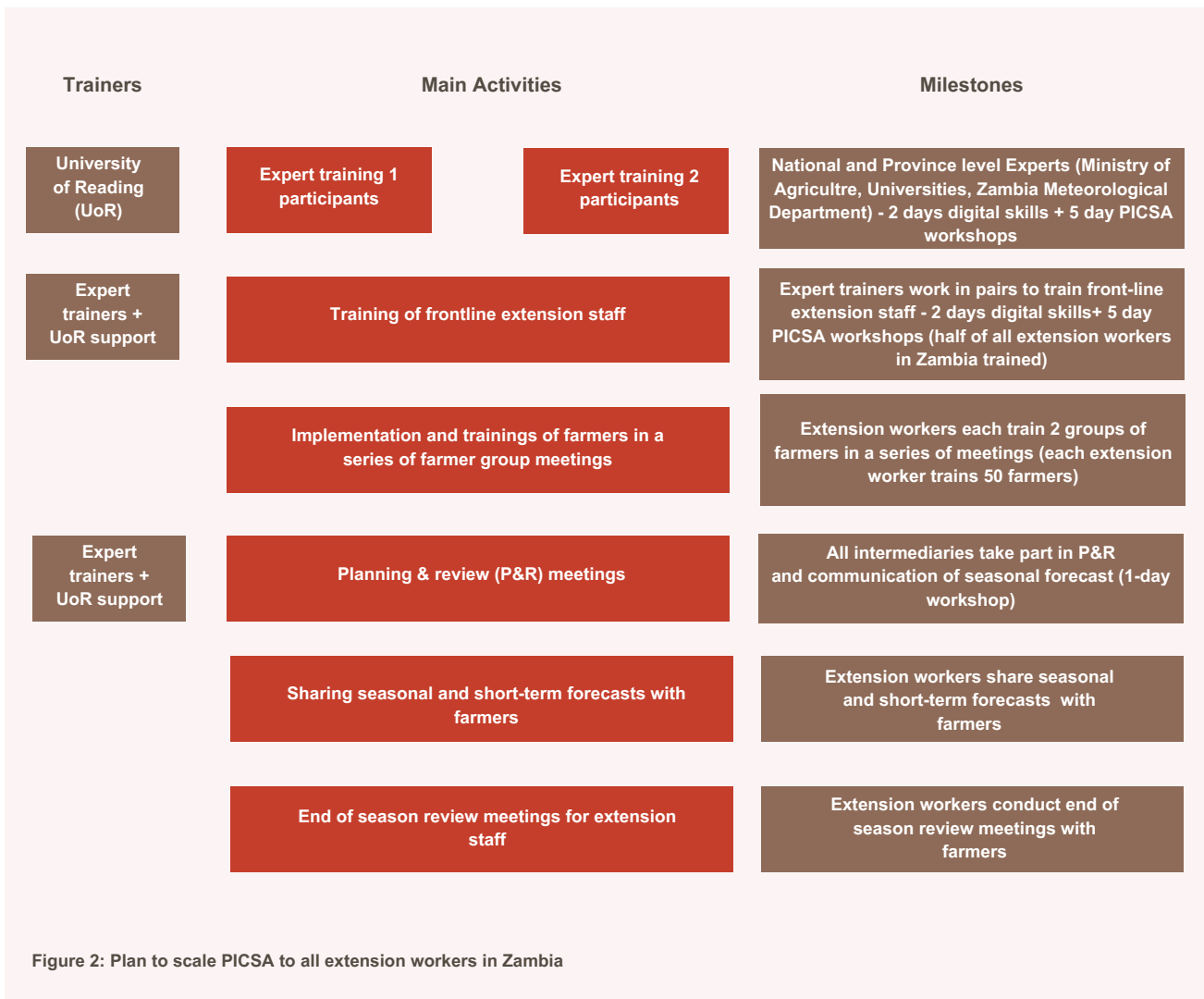


Figure 2: Plan to scale PICSA to all extension workers in Zambia

The process would be implemented by the Ministry of Agriculture of the Republic of Zambia and Zambia Meteorological Department with input from international PICSA experts for training support and also support to meteorological data systems. Importantly, in this brief, the plan was developed for the purpose of modelling the costs and benefits. If PICSA was to be implemented, the specific plan would be developed by the government institutions, with the support of PICSA experts and other partners.

Impacts of PICSA

The PICSA approach has successfully stimulated innovation and change by farmers in more than twenty countries and improved farmers’ resilience to climate variability and change.^{1, 2, 3, 4, 5} Multiple evaluations have shown that more than 85% of farmers trained in the approach have made changes in their crop, livestock and/or other livelihood enterprises as a result of their use of PICSA and that

most have benefited from increased income and/or food security as a result of these changes. Several international organisations have brought PICSA into their core approaches to work with smallholder farmers, including World Food Programme in Malawi, Mozambique and Tanzania and the United Nations Development Programme in Malawi and Zimbabwe.



Cost-benefit analysis

The AGRICA project implemented by the Potsdam Institut für Klimafolgenforschung (PIK) on behalf of BMZ aimed to assess climate and weather-related risks and the economics of selected adaptation strategies in Zambia. The study⁶ identified PICSA as one of the adaptation options and has completed a cost-benefit analysis for the nationwide implementation of PICSA, using the plan outlined earlier in this document. The results of the analysis show a highly positive benefit-to-cost ratio. Each USD invested in PICSA generates between 3.6 and 3.8 USD in benefits depending upon the climate scenario considered.

- The E-PICSA digital extension application can lead to further economies of scale and efficiency gains.
- The country-wide scaling of PICSA is achievable within a short timeframe and with significant economic and societal benefits.
- Stakeholders in the agriculture and food security sector of Zambia should join forces to implement this under the auspices of the Government of the Republic of Zambia.

Conclusion and recommendations

- PICSA has proved to be successful in stimulating innovation and change in Zambia and multiple other countries.
- Implementation to date shows that PICSA/E-PICSA works, is adopted widely, and has a strong positive impact on farmers' income, livelihoods, and food security.
- Evaluations of PICSA have demonstrated that the approach is gender-transformative and empowers women in decision-making processes.

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