Guidelines for Contributed Papers for the AES Annual Conference

Submission in the Contributed Paper category can be either in the form of an extended abstract or a full paper – in each case, please, follow these guidelines below and upload the pdf version of your document when submitting the application.

1. Extended abstract: follow the template in Annex 1.
2. Full paper: follow the guidelines for the Journal of Agricultural Economics (with length not exceeding 7000 words). To standardise submissions use the title page shown in Annex 2.

Accepted Contributed Papers will be made available to delegates through the AES website after the conference. In addition, papers from the conference are normally archived on the AgEcon Search repository at the University of Minnesota. If you would rather not have your paper included on AgEcon Search, please let us know.

Vera Eory, AES Programme Secretary, 2016

Annex 1 – Extended abstract for Contributed Paper session

Paper Title	**Impact of modern irrigation on household production and welfare outcomes: Evidence from the PASIDP project in Ethiopia**

Contributed Paper abstract prepared for presentation at the 91st Annual Conference of the Agricultural Economics Society, Royal Dublin Society in Dublin, Ireland

24 - 26 April 2016

Abstract	***200 words max***
Irrigation systems have been shown to substantially improve farmers' productivity and alleviate poverty. Our study provides an example of such investment, the Participatory Small-Scale Irrigation Development Programme (PASIDP) in Ethiopia. Combining a primary household survey with geographical data, we estimate the impact of the project on agricultural production and households expenditures using a novel identification strategy. Beneficiaries gain from the project through improved crop yields, which raise revenues, and allow switching from relying mainly consuming their own produce to purchasing greater amount of food from the market. Though we rule out that the project may have targeted farmers based on their agricultural performance, summary statistics indicate notable differences between beneficiaries and non-beneficiaries, an indication that the project might have systematically targeted farmers with certain attributes. Systematic targeting is often favoured either to ensure the highest rate of success, or to deliver the project to those who may need it the most, but may limit the generalizability of the project in relation to any efforts to scaling up.	

Keywords	Africa, Ethiopia, impact evaluation, participatory adoption, irrigation, agriculture
JEL Code	O13, Q15, Q16 see: www.aeaweb.org/jel/guide/jel.php?class=Q)

Introduction	***100 – 250 words***

What are the returns to investments in irrigation projects? Existing research has noted the impact of irrigation projects on agriculture and poverty among small-scale farmers. However, most of the studies that assess the returns to irrigation investments do not contain control groups or random allocations of individuals to receive irrigation projects. This is particularly important for impact evaluation since the placement of an irrigation project is likely to be correlated with geographical suitability, individual-level unobserved heterogeneity to self-select into participation, and pre-existing local conditions such as access to markets and roads.

We address the research question by analysing the Participatory Small-Scale Irrigation Development Programme (PASIDP) in Ethiopia. The project took place between 2008 and 2015 in four regions (Amhara, Oromiya, SNNPR , and Tigray) of Ethiopia, and covered more than 62,000 beneficiary households. The irrigation schemes were tailored to the local conditions and implementation capacity of the targeted beneficiaries. The program was introduced through a participatory

approach. The lessons learned from the implementation of the project may serve as the basis for scaling up the project to similar geographical settings and targeted beneficiaries in the future.

Methodology	***100 – 250 words***

The purpose of this study is to assess the causal evidence of the impact of irrigation investments on agricultural production and economic outcomes. Intuitively, irrigation projects should provide beneficiaries with a more constant supply of water for their agricultural activities (and possibly higher overall in quantity). As a result, one channel through which irrigation projects benefit farmers is through obtaining higher yields, and also diversifying their cultivation portfolio to include higher-value horticultural crops. Another mechanism is that irrigation may allow farmers to intensify their crop cultivation in terms of both land area cultivated and crop rotations. Therefore, irrigation projects may help farmers increase their income-generating activities and reduce their dependency on rainfall, which may be unpredictable.

We use a primary household survey conducted by the Ethiopian Institute of Agricultural Research (EIAR) in early 2015, and supplement the survey with information about geographical attributes. The survey covers 1,531 households in 20 kebeles. Within the same kebele, households may either adopt modern irrigation (PASIDP beneficiaries), traditional irrigation (PASIDP non-beneficiaries), or rely rainfed agriculture (control). Without a suitable instrumental variable or a regression discontinuity design to assign households into each treatment status, we first use a quasi-experimental design to account for selection on observable characteristics by controlling for a number of household-level characteristics and geographic variation. Then, we follow the multivalued treatment effects approach to estimate the impact of the PASIDP project on its beneficiaries. This approach allows us to account for potential spillovers of benefits from the project to the non-beneficiaries under traditional irrigation. If spillovers are present, we also expect notable difference in the outcomes between households in the non-beneficiary and in the control groups. We supplement the multivalued treatment effects approach by using the instrumental variable (IV) approach to account for the endogenous nature of program placement.

Results	***100 – 250 words***

Click here to enter text.We observe significant and positive effects on crop revenues and yields of PASIDP beneficiaries and households using traditional irrigation compared to the rain-fed control group. Results provide evidence of positive effects of both modern and traditional irrigation schemes on crop yields and revenues, with estimated effects proving consistently positive across all crop yields and revenue quartiles. Households receiving benefits from the project and households using

traditional irrigation also have lower values of crop consumption from their own production, but have higher levels of food expenditures compared to that of the households using rainfed agriculture. However, we find no significant impact of the project on expenditures of non-food items. Our IV results also exhibit qualitatively similar results, which help confirm the strength of our multivalued treatment effects results. Further, to ensure the robustness of our results, we perform a number of checks to validate our estimates. Results from the robustness checks confirm that our estimates are robust according to several specifications tested.

Discussion and Conclusion	***100 – 250 words***

There are at least three contributions of this study to the literature. First, it complements the broad literature which documents the impact of infrastructure projects on agricultural and poverty outcomes (Jacoby, 2000; Duflo and Pande, 2007), specially on irrigation infrastructures (Del Carpio et al., 2011; Dillon, 2011). Our study belongs to the small but growing number of studies that adopt the quasi-experimental approach to quantify the impact of small-scale irrigation projects to account for the non-random placement of irrigation projects and selection into participation. Second, our empirical approach accounts for potential spillovers from beneficiaries to non-beneficiaries by estimating the impact of the project simultaneously households in each treatment status, and provide pairwise comparisons of the average treatment effects. And third, empirical works using the impact evaluation methodology to estimate the impact of agricultural projects are small in number. This is particularly important for policy as international organizations have also noted the limited number of counterfactual-based empirical studies evaluating the impact of agricultural projects, and thus any additional contributions to this literature would be beneficial for designing rural development policies

Annex 2 – Front page of full paper for Contributed Paper session

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