PAGE
policy analysis on growth and employment

Post-conflict and rural income in Colombia

RESEARCH PROPOSAL

Presented to

Partnership for Economic Policy (PEP)

By

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There are three main areas/dimensions to all PEP-supported projects: capacity building, research and policy engagement. Each dimension must be considered with due care and attention, as they will be assessed individually and concurrently to determine the overall quality of a proposal.

The PEP proposal template is structured in five sections, as follows:

- Project overview and objectives

- Capacity building – team composition and experience

- Research – literature review, method and data

- Policy relevance and engagement strategy

- Other considerations

SECTION I – PROJECT OVERVIEW & OBJECTIVES

1.1. Abstract (max 100 to 250 words)

The abstract should state the main research question, the context and its relevance in terms of policy issues/needs in relation to PAGE priority issues. Complete with a brief description of the method and data that will be used.

The consolidation of the peace process in Colombia promises, among other things, the recovery of the rural sector, through the sustainable growth of agriculture. An important agreement reached in this process is the "Integral Rural Reform" that proposes the establishment of a land fund for the redistribution of three million hectares (2.6% of the total land available) among the peasants and the creation of Reserve Zones Peasant.   Likewise, a series of policies that seek economic and social

recovery of the rural areas most affected by the conflict are also implemented.   These policies will allow the rural population to have access to subsidies for production, low-cost credits and technical assistance for the implementation of crops; on the other hand, investments will also be made in tertiary roads, which will facilitate access to markets, and adaptation of land to improve not only the productivity infrastructure, but also achieve more efficient use of land with agricultural vocation. Therefore, the objective of this research is to evaluate the economic impact of government policies that arise in the post-conflict and that are expected to have a significant impact on the income of rural households. Specifically, we are interested in evaluating how post-conflict policies affect the size and composition of income of rural households.

1.2.   Main research questions and contributions (max 500 to 700 words)

Explain the focus (or key questions) of your research and its policy relevance. Explain why you think this is an interesting research question and what the potential usefulness and value added of your work might be - in terms of both (general) knowledge gaps and policy needs for evidence base.

The literature review shall be detailed under "Research" (section III), not in this section.

As part of the policies aimed at peace-building in the post-conflict period in Colombia, the government will be delivering production subsidies, providing technical assistance, facilitating access to land, enhancing land adaptation, and improving rural roads to agricultural producers located in the zones afflicted by the conflict. Therefore, a series of questions arise about the expected impact of these policy instruments. Among them, the most relevant are:
- What will happen to the supply of agricultural products from small, medium and large farms in the country?
- How will these policies affect the production arising from farms located in rural areas?
- What are the expected impacts of the policy on rural and urban households' income and how will they differ among them?
- How will the pattern of income sources change as a consequence of policy implementation?
- Will these changes entail an increase or decrease of income diversification -measured as the degree of dependence of rural households with respect to sources of income?
- Related to the above question, what is the expected impact of the policies on rural labor demand for skilled and unskilled workers and what on self-employed skilled and unskilled farmers?

SECTION II – CAPACITY BUILDING

2.1. Team composition and experience

For each research team member, please indicate (using the following tables – one per member):

1. **Age, sex, as well as relevant/prior training and experience** in the issues and research techniques involved (start with team/project leader).

   - Note that PEP favors gender-mixed teams, composed of a maximum of four (4) members, at least 50% female researchers, and at least two (2) junior researchers (aged under 30), all contributing substantively to the research project. PEP also seeks gender balance in team leaders and thus positively encourages female-led research teams.

   - Each listed member must post an up-to-date CV in their profile on the PEP website – refer to "How to submit a proposal" on the call's webpage.

2. **Benchmark and expected capacity building**:

   – Describe the research capacities that <u>each</u> team member (and potentially her/his affiliated institutions) is expected to build through their participation in this project. This is an important aspect in the evaluation of proposals and should be presented in detail.

     - What techniques, literature, theories, tools, etc. will each team member and her/his institutions learn (acquire in practice) or deepen her/his knowledge of?

     - How will these skills help each team member in their career development?

     - What are the current state of knowledge of each team member in regard to the project you are proposing?

3. **Task and contributions to project**: Indicate the specific tasks each team member would carry out in executing the project.

   – Note that one of the team members must be clearly identified as responsible for coordinating and reporting on the design/implementation of the projects' policy engagement and communication strategy (see section III below). To achieve a more balanced task distribution, PEP advises to select a member other than the project leader.

Team leader

Name	Age	Sex (M, F)	Highest degree/diploma
Dora Elena Jiménez Giraldo	45	F	PhD, Economics
Training and experience	Previous experience as research assistant in PEP projects involving the use of applied general equilibrium models.		

Expected capacity building	Improve knowledge in microsimulation techniques, specifically in the construction of a model for the Colombian agricultural sector
Contribution to project	Elaboration of the SAM and a computable general equilibrium model for the rural sector in Colombia

Team member #2

Name	Age	Sex (M, F)	Highest degree/diploma
Adrian Saldarriaga-Isaza	39	M	Ph.D. in Engineering
Training and experience	Previous experience in data analysis and research on natural resources.		
Expected capacity building	Improve his knowledge in computable general equilibrium model and in the construction of a social accounting matrix for the Colombian agricultural sector.		
Contribution to project	Contribute in the construction of the computable general equilibrium model and in the preparation of the SAM for the Colombian agricultural sector.		

Team member #3

Name	Age	Sex (M, F)	Highest degree/diploma
María Adelaida Gaviria Rivera	29	F	Master, Rural development
Training and experience	Previous experience in data analysis and research on Rural development using econometric techniques.		
Expected capacity building	Improve her knowledge in computable general equilibrium model		
Contribution to project	Contribute in the construction of the computable general equilibrium model		

Team member #3

Name	Age	Sex (M, F)	Highest degree/diploma
Mayra Alejandra Correa	28	F	Economist
Training and experience	She has some research experience as researcher research seed in international economy at the Universidad Nacional. she has worked on the construction of a SAM macro for Colombia.		
Expected capacity building	Improve his knowledge in the construction of a SAM for Colombia		
Contribution to project	Contribute in the construction of the SAM		

2.2. List of past, current or pending (non-PEP) projects in related areas involving team members, including resulting publications (If any)

Name funding institution, title of project and related publications, list of team members involved.

Name of funding institutions	Title of projects and related publications (link)	Team member(s) involved
Universidad Nacional de Colombia	FDI and productivity spillovers on Colombian manufacturing	Dora Elena Jiménez Giraldo
	Ensayos De Economía ISSN: 0121-117X ed: Universidad Nacional de Colombia v.41 fasc. p.109 - 128 ,2012. Ensayos De Economía ISSN: 0121-117X ed: Universidad Nacional de Colombia v.39 fasc. p.49 - 72 ,2011.	
Universidad del Rosario 2017	Title: Essays on non-homothetic preferences, income distribution and patterns of trade and foreign direct investment	Dora Elena Jiménez Giraldo
	Publication (reference): Working Paper: Essays on non-homothetic preferences, income distribution and patterns of trade and foreign direct investment	
Universidad Nacional de Colombia	Title: Effect of transmission of the exchange rate on the price of Colombian imports 1990-2003	Dora Elena Jiménez Giraldo
	Publication (reference): "Efecto transmisión de la tasa de cambio al precio de las importaciones colombianas 1990-2003" . Ensayos De Economía ISSN: 0121-117X ed: Universidad Nacional de Colombia	
Mining and Energy Planning Unit of the Ministry of Mines and Energy of Colombia	Title: Mining Scenarios for Colombia)	Carlos Adrián Saldarriaga
	Publication (reference):	

Latin American and Caribbean Environmental Economics Program	Title: Evaluation of the Fuel Conversion Program in Vehicles in the Aburrá Valley (Colombia)	Carlos Adrián Saldarriaga
	Publication (reference):	
	Title:	
	Publication (reference):	

2.3. List of past or current PEP-supported projects involving team members, including resulting publications

Project code (e.g. PMMA-12345)	Title of project and related external (non-PEP) publications, if any	Team member(s) involved
MPIA 12618	Dutch disease, informality, and employment intensity in Colombia, Working Papers MPIA 2016-07, PEP-MPIA.	Ricardo Argüello, Edwin Torrés, Mónica Gasca.
	Title:	
	Publication (reference):	
	Title:	
	Publication (reference):	
	Title:	
	Publication (reference):	
	Title:	
	Publication (reference):	
	Title:	
	Publication (reference):	

SECTION III – RESEARCH

3.1. Literature review (max 1000 to 1500 words)

Explain specific gaps in existing literature that your research aims to fill. You might want to explain whether or not this question has been addressed before in this context (including key references), and if so, what you wish to achieve (in addition) by examining the question again?

Around 28% of Colombian municipalities have been affected by the armed conflict. According to data from the 2014 agricultural census, they represent 32% of total agricultural production units in the country, 24.7% of total area under agricultural use, 20% of natural forests, and 22.2% of total rural area. The National Planning Department (2016) shows that 88% of the municipalities with the highest incidence of armed conflict are rural. The percentage of land under agricultural use within

the set of municipalities directly affected by the conflict is 31.7% (more than four percentage points above the corresponding share among the rest of municipalities) while the share of natural forests is 53.5% (almost 8 percentage points below the corresponding to the rest of municipalities). Land with potential agricultural use (i.e. cleared land with no current use) shows a higher share among municipalities directly affected by the conflict than among the rest of municipalities (11.8% vis a vis 8.8%), suggesting less intensive economic activity in these areas. Figure 1 shows a map of Colombian municipalities with a color code indicating the intensity of the conflict. The red color means the intensity of the conflict is very high, while the green color means it is low (orange and yellow mean high and medium, respectively).
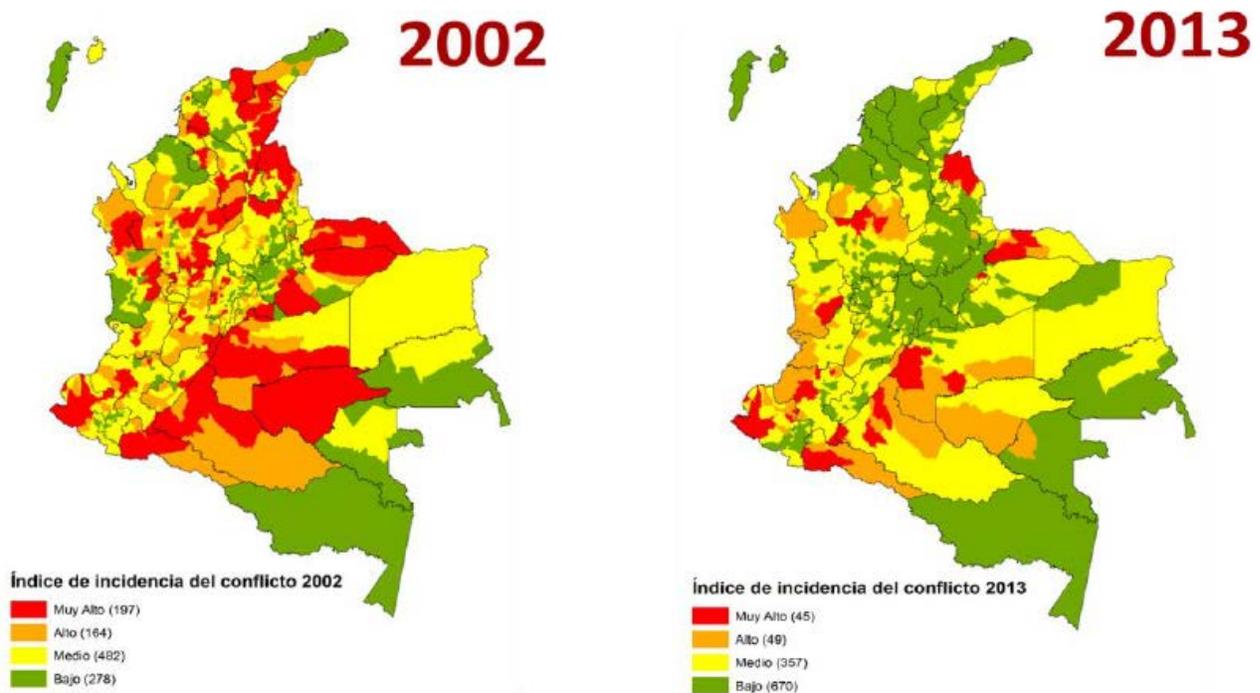

Figure 1. Index of the incidence of conflict in Colombia in 2002 and 2013 (Source: CONPES, 2015)

This is consistent with Arias et al (2017) finding, in the sense that rural households accommodate to life in conflict areas at a lower income trajectory. This is due not only to the above mentioned lower intensity of land use, but especially due to changes in the portfolio of activities that these households engage in. In particular, Arias et al show that small farmers substitute activities with short-term yields and lower profitability for high profitability high investment activities. Furthermore, they show that as violence intensifies, farmers concentrate their activities portfolio in subsistence activities. On the other hand, Fergusson et al (2014) show that deforestation is positively linked to paramilitary violence in Colombia. Using a panel specification, they show that paramilitary action significantly reduces the share of forest cover and, using instrumental variables, they also show that the link between paramilitary action and deforestation disappears once the paramilitary demobilized. The authors discuss evidence suggesting that this relationship operates through population displacement targeted to secure areas for illegal crops development, mineral resources exploitation, and extensive agricultural activities.

Implicit in the results from Arias et al (2017) is the negative effect of conflict on agricultural investment. This is a relationship that has been internationally studied, for instance in Messer et al

(1998), who estimate that during periods of conflict agricultural production drops 12.3% on average each year, and in Ksoll et al (2010) it is shown that post-election violence in Kenya negatively affected cut flower exports. As Kimenyi et al (2014) claim, in the cases of Mali and Nigeria, conflict has four main effects on agricultural actors and investment: (i) reduces human mobility, (ii) reduces access to input markets, (iii) increases theft of various assets, and (iv) increases prices of inputs and products. These resulted in coping strategies that included moving production closer to home (so it can be more easily protected), diversification to activities with lower risk of attack, halting agricultural activities altogether and concentrating in businesses outside agriculture, and negotiating protection with armed groups. Also, as documented in Rockmore (2015) rural households in northern Uganda change the composition and size of their livestock portfolio and their crop choice as a response to conflict, decreasing risk at the cost of welfare.

With the signing and implementation of the Peace Accord between the leftist guerilla group FARC and the government, it is expected that much of the above mentioned obstacles to rural development can be removed and rural households (and the Colombian population at large) wellbeing could improve. The accord includes provisions beyond disarmament and reintegration of former combatants, and entails a deep transformation of rural areas political and social organization as reflected in the set of policy interventions it calls for, as mentioned ahead. There is widespread recognition that this represents a unique opportunity for sustainable rural development, opening the way for developing new infrastructure projects and increasing investment in rural areas (Morales, 2017). The post-conflict is envisioned as an opportunity to think the rural sector beyond agricultural production and to redefine the relationship between the rural and urban sectors for promoting a holistic vision of the territories, based on a comprehensive (environmental, social, and economic) territorial planning process, supported by the provision of public goods for better security and income generation, with special attention to gender and ethnic issues (CONPES, 2015).

In spite of this bold view of the post-conflict process, the international literature calls the attention to the role of agricultural rehabilitation as a means to linking humanitarian assistance, social protection, and development. In this regard, learning from the Afghanistan and Sierra Leone experiences, indicate that: (i) the objective of agricultural support should not solely focus on increasing production but also on enhancing consumption, markets, and livelihoods, (ii) local efforts must match to the meso and macro policies necessary to support them, and (iii) there is scope for strengthening the linkages between livelihood protection and development (DFID, 2005). Therefore, agricultural support should facilitate the transition from supply-led programming (as usually implemented by governmental agencies and international donors) to the establishment of market-driven systems for support delivery, in the context of broader efforts to protect and enhance rural livelihoods -understood as the ways in which households use and combine their assets to achieve desired income outcomes (Longley et al, 2006).

This vision entails an explicit rebuke of what has been called the "yeoman farmer fallacy" (Farrington and Bebbington, 1992), according to which virtually all rural poor strive to alleviate poverty through increased or more effective investment in agricultural activities. To the contrary, there is the realization that a significant proportion of the rural poor earn sizeable parts of their income from outside of the farm (i.e. they diversify their income sources either for supplementing or substituting for agricultural income). While it is estimated that a large share of rural households' income comes from agriculture, the evidence points to an increasing importance of non-agricultural activities as

they may provide for in between 35 and 50 percent of rural income in developing countries (see Barrett et al, 2001a for evidence on Africa; Reardon et al, 2001 for Latin America; Reardon et al, 1998 for Asia, and Davis et al, 2010 for a general overview). There is evidence that poor rural households tend to engage in subsistence level activities, on and off-farm, unable to provide for reinvestment or capital accumulation, leading to what can be termed survival diversification (Little, et al, 2001). Nonetheless, there is also evidence supporting the idea that rural diversification and secondary town development lead to faster poverty reduction and inclusion, as poor households may transition out of agriculture into non-agricultural activities and jobs in small and secondary towns (Christiaensen et al, 2013).

On the other hand, different types of income generating activities relate through production and consumption linkages, as well as through the supply of factors of production (mainly labor and capital) and their competing uses. This introduces a structural dimension to their dynamics, highly dependent on the characteristics of the local economy and its degree of integration into larger economic networks, and has important implications for policy design. Furthermore, poor households face constraints that hinder them from taking advantage of the opportunities that non-agricultural activities offer. Households with scant agricultural assets seem to face higher barriers to entry into potentially more beneficial non-agricultural activities (Barrett et al, 2000; Barrett et al, 2001b), lower educational levels are correlated with lack of access to jobs and non-agricultural earnings with higher returns, and market access (understood as having roads and other infrastructure, as well as being in the vicinity of an urban center) is correlated with better opportunities to get into non-agricultural sources of income (Barrett et al, 2001b; Reardon et al, 2001).

An analysis of income diversification patterns for Colombian rural households between 1993 and 2013 (Arguello and Poveda, 2016), shows that income diversification has been a persistent characteristic of rural income, positively associated with the income level of the household, and that the share of income arising from agricultural salaries (i.e. income accruing from the agricultural labor market) has declined. Additionally, as income increases, households' tend to depend more from nonagricultural salaries (i.e. from the nonagricultural rural labor market) and less from agricultural income directly generated in the farm. This dynamics shows the importance of simultaneously considering the interaction between the different sources of income that rural households have, not only in terms of the linkages mentioned above but also in terms of the way households can take advantage of the different income sources, including their chances for participating in the markets through which they materialize (being these output –product- markets, input markets, or labor markets).

Finally, it is important to mention some characteristics of the agricultural production units: According to the census, there are 2.7 million agricultural producers, 725,000 of which live in the rural dispersed area, while the rest lives in small towns and cities near the countryside. 75% of producing units have less than five hectares and account for slightly more than 2% of the total agricultural area, while, on the other extreme, 0.2% of agricultural units have 1,000 hectares or more and account for 73% of total agricultural area. Among agricultural units with less than five hectares, 76% of the area is devoted to agricultural activities, 11% to forests, 10% to non-agricultural uses, and 3.1% to other uses. These figures change in a moderate manner for agricultural units from 5 to less than 1,000 hectares, where, on average 69.5% of area is used for agricultural activities, 22% for

forests, 5.7% for non-agricultural uses, and 3% for other uses. In contrast, large landholdings (more than 1.000 hectares) devote 27% of the area to agricultural uses, 70% to forests, 1% to non-agricultural activities, and 2.2% to other uses. Agricultural units with more than 500 hectares devote more than three quarters of their area to pastures. Only 10% of agricultural units declared having received technical assistance, 20.4% had some type of irrigation system, 11% asked for credit and 90% of them had the credit approved, and 16% had some type of productive infrastructure.

Rural units devoted to non-agricultural uses account for 18.6% of total units and 2.2% of total area. 17% of them hold agroindustrial activities, 11% industrial activities, 20.5% commercial activities, and 52% services activities. There are also agricultural units that develop both agricultural and non-agricultural activities. Of the latter, 65% are services activities, 26% agroindustrial activities, 5% commercial activities, and 4% industrial activities. The existence of agricultural production for self-consumption is relatively widespread as almost 42% of agricultural units devote part of their areas to it and 37% of rural residents declare self-consumption as the main purpose of their agricultural activity. From census data we know that 16% of agricultural units declare possessing machinery. Slightly less than 12% of agricultural units with less than five hectares have it, while 37% of agricultural units with 1,000 hectares or more possess it. The size type with the largest possession of machinery is agricultural units between 500 and less than 1,000 hectares, with 48% of units possessing it.

3.2. Methodology (max 1200 to 1600 words)

Presentation of the specific techniques that will be used to answer the research questions and how exactly they will be used to do so.

- Explain whether you will use a particular technique normally used in other contexts or whether you intend to extend a particular method and how you will do so.
- Explain if these methods have already been used in the context you are interested in (including key references).
- **For PMMA (microeconomic analysis) proposals only**: In case the proposed methodology aims to empirically estimate a causal relationship, explain potential sources of endogeneity in the context of your research, and how the proposed technique(s) would allow the identification of the relevant parameters.

Overall, the proposed methodology covers two related but distinct dimensions. First, a static CGE model specialized in agriculture, in the sense that its structure must account for the particular characteristics of agricultural production in general and for specific features as required to represent the main characteristics of Colombian agricultural production, must be designed and programmed.

Second, an appropriate Social Accounting Matrix (SAM), with due sectoral and production unit types details must be built, for running the model.

The structure of the model should take into account the still relatively large presence of agricultural production and the heterogeneity of production units that the recent Colombian Agricultural Census reported. Information coming from the census will therefore inform both the construction of the social accounting matrix (SAM) required to run the model and model design. We plan to use the PEP1 standard model as our departing point and modify it in order to incorporate a production structure particular of the agricultural and livestock sectors.

The production structure for agriculture will have the form showed in graph 1, below,
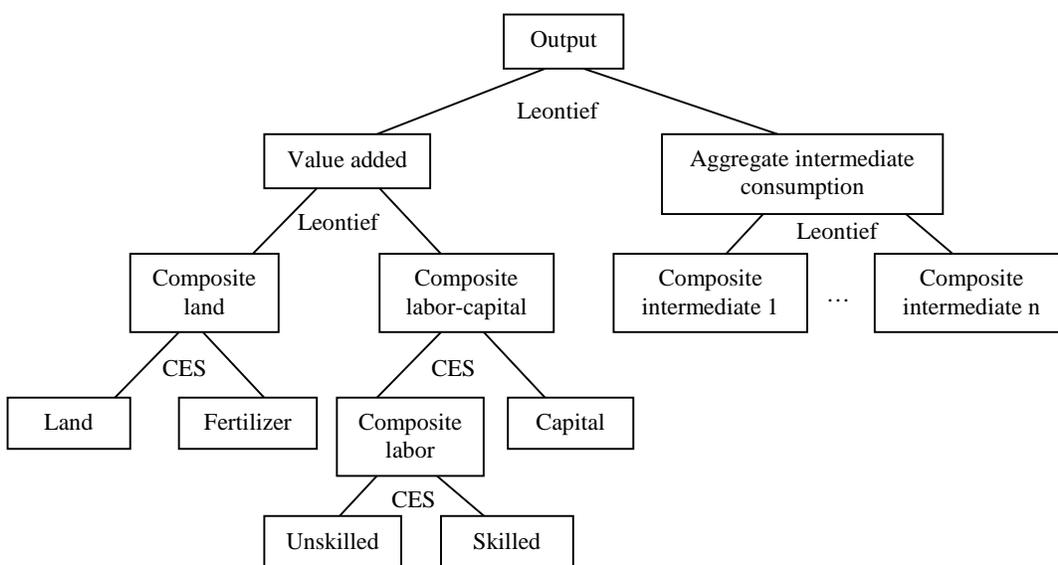
Graph 1. Structure of agricultural and livestock activities' production

The SAM will have as base year 2014, and in its construction we will take advantage of several data sources, especially the 2014 Agricultural Census.

For agricultural production in particular we envision that agricultural products (which we assume homogeneous) are produced by small, medium, and large rural farms, (therefore, we can implement policy shocks directly aimed at small farmers, which are supposed to be the main beneficiaries from the policies). The National Agricultural Census (2014) reports that 70% of Agricultural Production Units have less than 5 ha (small firms), 24.5% have between 5 and 50 ha (medium firms) and 4.9% have between 50 and more than 1,000 ha (large firms). The National Agricultural Census (2014) also shows that on average only 16% of the Agricultural Production Units have productive infrastructure, machinery and technical assistance and 33% use the irrigation system. However, these characteristics are more common in Small and Medium Units of Agricultural Production that belong to peasants and small producers. Conversely, the large production units belong to the capitalists and have a better production technology. The public policies of the post- conflict will be aimed at the

small agricultural producers that have been the most affected by the conflict, therefore to determine the impact of the policies it is important to carry out this classification.

Agricultural activities will be divided into conflict zones and non-conflict zones. This division can be made based on the statistical information available in the National Agricultural Census. The National Planning Department (2016) constructed an incidence rate for the armed conflict for 2013, categorizing the 1,121 municipalities that Colombia has according to the degree of incidence of the conflict.   In this index it was found that in 81 municipalities (7%) the conflict has a very high incidence, in 106 (9%) it has an average incidence, in 411 (36%) it has a low average incidence and in the remaining 382 (34) a low incidence. Likewise, the National Planning Department (2016) shows that 88% of the municipalities with the highest incidence of armed conflict are rural. This division will allow us to implement in the model shocks related to post-conflict public policies that are aimed at conflict zones.

On the other hand, activities (all activities in the model) demand some of the following factors: (i) unskilled rural labor, (ii) skilled rural labor, (iii) unskilled urban labor, and (vi) skilled urban labor (ix) capital, and (x) land. Additionally, the distinction between urban and rural labor comes from the household survey we plan to use to build the SAM, and allows us to differentiate labor demand according to geographical (and socioeconomic) regions, for a better capturing of production and consumption linkages.

Consistently with the definition of labor types, the SAM will have at least two types of households, a type for each broad region: rural and urban. Likewise, the possibility of dividing households by income quintiles will be studied, in order to take into account distributive effects. As the household surveys we will use to build the SAM allow for tracing for each household type the composition of their income in terms of both sector of origin (industry or activity).

Post-conflict public policies are related to subsidies to production, technical assistance, access to land, processes of adaptation of land for cultivation and construction and improvement of tertiary roads in rural areas. These policies are expected to generate an increase not only at the level of production, but also in the productivity of the agricultural sector and in the size and diversification of income of rural households.

In order to determine the economic impact of some of these policies, the following simulations will be executed:

Subsidies: Implementation of post-conflict policies related to subsidies received directly by producers that allow an increase in production and productivity.   The impact of the following subsidies will be studied:
- Credits
- Technical assistance
- Land improvement

Therefore, the objective is to determine if these policies achieve a greater insertion of the rural households both in the labor market and in the product market, and how this insertion achieves not only the increase but also the diversification of income of rural households.

The possibility of incorporating domestic consumption of non-commercialized agricultural products into the model will be evaluated in the development of the project; there are several alternatives that have been used in the literature. For instance, in Lofgren et al (2002) there is household consumption of non-marketed commodities, transaction costs for marketed commodities, multiple goods production by a single activity and same-good production by several activities. In Lofgren et al (2013), the MAMS model has been extended to account for a relatively detailed dynamics among productive sectors, including subsistence dynamics. On the other hand, McArthur and Sachs (2013) build a green-revolution type model including constraints on farmer's self-financing of inputs, minimum subsistence consumption requirements, and several forms of geographic variation for underlying productivity.

3.3.   Data requirements and sources (max 400 to 700 words)

This is a critical part of the proposal. The key issue is to explain the reason for the choice of your particular databases. You must establish that they are ideal for the question you wish to address and that you have or will have access to these data before your project begins. Please consult the "Guide for designing a research project proposals" for more detail.

As mentioned, data requirements for the study demand a varied set of data sources. The 2014 agricultural census provides structural as well as detailed data on the agricultural sector. According to it, the total agricultural area is estimated in 43.1 million hectares, with 34.4 million devoted to pastures, 7.1 million to crops, and more than one million hectares left temporarily idle. Other relevant features of the sector that are provided by the census were mentioned in the previous section. We will be using the census' microdata for building the SAM. From it we can build the structure of the agricultural sector in terms of areas affected by the conflict and areas not directly affected, the size distribution of farms in each area and the allocation of land among them, the portfolio of products that each farm type in each area produces, and an estimation of gross labor demand by each farm type.

Another sources of data are three household surveys with urban and rural coverage: the integrated household survey (Gran Encuesta Integrada de Hogares –GIHG), the Living Standards Measurement Survey (Encuesta de Calidad de Vida), and the Income and Expenses survey (Encuesta Nacional de Ingresos y Gastos). The first two have data collected in 2014, while the last one with data collected in 2006-7. From the first two surveys we can characterize households' income according to its sources, as mentioned in the literature review section. This classification can be distinguished between economic sector of origin (agriculture, non-agriculture, etc., as the surveys ask for the

industry to which the income earner is attached to), functionality (wages or earnings, according to the occupational position of the individual), and relational situation (active or earned income – wages and earnings, passively earned or directly earned income – other income and transfers).

This way we can define several household types in order to take into account these income patterns and their interactions. As mentioned, we can distinguish between rural, urban, and metropolitan households, and possibly split each category into different types according to their conflict-related location.

Another source of information is the National Accounts. The DANE has already issued definitive supply and use tables for 2014, as well as the integrated accounts (institutional accounts) for the same year, so we have all the basic information required for building the 2014 macro-SAM. Also, as mentioned, the DANE is currently changing the national accounts base year (to 2015), so we can profit from the work it does for estimating input-output tables for the agricultural and livestock sector at a detailed subsectoral level. This information, along with data on agricultural production costs recorded by Agronet for different types of producers (small, medium and big) will be instrumental for building the SAM and enabling the introduction of several of the features of the model.

SECTION IV – POLICY ENGAGEMENT

4.1.   Policy relevance

4.1.1. Describe policy context and needs

Describe the specific policy issues or needs that your research aims to address; how your potential outcomes and findings may be used in policy making? Please be as precise as possible, indicating specific current or prospective policies and the specific contributions your research would make.

Also, justify timing of your research in terms of policy and socioeconomic needs and context – e.g. reference to existing, planned or potential policies at the national, regional or local level; specific political context; international examples of similar policy problems or solutions, etc.

With the end of negotiations between the Colombian Government and the FARC guerillas an enabling environment is expected to arise for rural development in Colombia. Consolidation of the peace process and rural development will require, more than ever before, strong and inclusive agricultural growth. The first section of the agreement between the government and the FARC deals with the rural sector and under the title "Integral Rural Reform" calls for inclusiveness for peasants, regional integration, and food security. It provides, among other initiatives, for the establishment of a land fund for the redistribution of three million hectares (2.6% of total land available) among peasants, the creation of a number to be determined of Peasant Reserve Zones, the provision of rural education and basic services, and direct support for production projects. For agricultural growth and the development of the peace agreement to sustainably happen, sound agricultural and

rural policy must be put in place and informed and science-based policy design is called for. This is especially true as implementation of the peace agreement is expected to happen largely from the bottom up and a big picture perspective is required to ensure that local initiatives are consistent with macro conditions, economy-wide linkages, and sectoral growth, in the context of an open economy.

In this framework, the Colombian government has issued policy interventions aimed at incentivizing agricultural productivity and employment creation in the rural sector, with a special focus on rural areas traditionally hit by the armed conflict. The National Employment Service has a rural component with three main areas of action: (i) stabilization programs, with a target to supply temporary employment -in any sector of the economy; (ii) recovery and re-socialization programs, aimed at enhancing income generation and employment in areas affected by the conflict; and (iii) sustainable and decent employment, with a focus on generating permanent and good quality employment in rural areas. To date, the service has developed activities in more than 160 municipalities and it is projected that will extend its coverage with the full implementation of the peace agreement. In several instances the employment programs are linked to broader interventions focused on the development of agricultural and nonagricultural production projects in rural areas.

A myriad of relatively new governmental agencies (some of them created last year) develop activities that are supposed to help generate the employment opportunities that the service promotes. The Agency for Rural Development is in charge of developing the Integral Plans for Rural and Agricultural Development, that is of implementing the agricultural policy designed by the Ministry of Agriculture. The Agency for the Renovation of the Territory is in charge of developing the Rural Development Plans with a Territorial Focus, which is the planning instrument through which the Peace Agreement is supposed to be implemented in areas formerly under conflict. The National Land Agency is in charge of developing the Plans for the Social Planning of Rural Property Use, which are aimed at regulating land property, redistributing the three million hectares, and implementing the Peasant Reserve Zones, all agreed under the peace accord.

This necessary division of labor is proving difficult for coordination and systemization. In particular, in the absence of a unified framework for steering policy intervention, the diversity of programs, actions, and interests, embodied in the day to day activities of these agencies make it difficult to have a clear picture of where is the whole set of policies headed to and what their impact may be. We posit that an important contribution of this research to post-conflict and rural policy in Colombia is to provide, as mentioned above, a big picture of the structure and dynamics of the rural sector that aids these agencies in putting into perspective their relatively compartmentalized efforts. While an important part of the activities of these agencies are too micro to be adequately captured in the CGE model, the research certainly can illuminate the distinctive ways in which their actions fit into this structure and how they may have an effect (and what kind of an effect) into its dynamics.

Aside from the employment program, the government plans to implement policy interventions in the following areas:

(i)Subsidies: National Government will give subsidies to peasant, family and community economy by general services as land distribution, technical assistance, tenement, infrastructure etc. Under the following criteria:
- The provision of non-refundable seeds

- The promotion of a Rotary fund for associations of small producers
- Credit access to peasant, family and community economy
- The promotion of crop insurance
- Subsidized credit

(ii)Technical assistance: In the National Development Plant is posed a New Model Technical Assistance with following characteristics:
- Massive, relevant and timely
- Offer differentiated services by type of producer and productive project
- The model will be organized by modules that contemplate agricultural issues and rural economy in general
- The model will be joint National System of Agroindustrial Science and Technology
- Incorporate producers into the research process

In other hand, in the document of Final Agreement technical assistance is characterized by:
- Public service, free for beneficiaries of the land fund and small producers and will have a subsidy for large producers
- It will include a monitoring and tracking system
- Link assistance with research
- Promote the custody of native seeds

(iii)Tertiary roads rehabilitation: The tertiary roads is the great bet of infrastructure for the development of land and the consolidation of the peace, since it is execute in the zones more vulnerable and with more impact in the generation of local economies. (DNP, 2014). Furthermore, the article 5 of the law 1682 of 2013, it established as a public function the action of planning execution, maintenance and improvement of projects and infrastructure works of transport.

The main sources of financing for territorial entities to the rehabilitation of tertiary roads is: General Budget of the nation, General Royalty System, General Participation System, Financial Territorial Development, Department of Social prosperity, own income, among others (DNP, 2017), the territorial entities can have access, if it comply with requirements of law. The National Institute of Roads have guidelines for road construction and budget execution, with that the country plans to join the districts with the urban center.

(iv) Infrastructure and land adaptation: First, with regard to infrastructure differential schemes will be created for access to public services, such as the one mentioned in the decree 1272 of July, 2017, for water, sewerage and toilet, ensuring the use of economies of scale, there will also be public-private partnerships that allow financing and provision in the long term, by the private sector.

Second, with regard to land adaptation National Development Plan 2014-2018 (DNP, 2014) and "Integral Rural Reform" (Mesa negociadora, 2016) propose to order the rural territory in such a way that it allows access to the land to the population of scarce resources that lacks land; This measure will be accompanied by policies of legal security in relation to land, which not only facilitates the recovery of the land in the face of a dispossession or controversy, but also promotes investment and

development. Finally, the promotion of efficient use of land and natural resources seek better use of land with agricultural vocation.

Finally, peace will allow the return to rural areas of a large number of peasants who had moved to the cities fleeing violence in the countryside, the new scenario is likely to recover the land they had lost or abandoned. In addition, the rural population will have subsidies and technical assistance for production, better conditions for the association and creation of cooperatives for the commercialization of their products, investment in infrastructure in rural areas and on tertiary roads, which will encourage permanent agricultural activities directed to the market, substantially reducing agricultural activities for self-consumption that had increased in the absence of optimal social and economic conditions for the marketing of their products. In conclusion, post-conflict policies will achieve the restructuring of the rural sector in Colombia increasing not only agricultural production, but also their levels of productivity.

4.1.2. Consultations to date

List the consultations that you have had with potential research users (e.g. policy makers or stakeholders) and that have helped define your research question, and/or informed you of the specific policy context described above.

For each institution consulted, please:
- List key (individual) representatives who participated in the consultation
- Describe the main outcome(s) of the consultation (feedback, inputs, etc.)

To date, the respective consultations have not been made, but we are in the process.

Name of institution/organization #1	Ministry of Agriculture and Rural Development
List the key representative involved in consultations (names and titles/positions)	
– Claudia Jimena Cuervo Cardona, Vice-minister of rural development	
Describe main outcomes of consultation – feedback or inputs received	
Insert your text here – max 100 words	

Name of institution/organization #2	Rural Agricultural Planning Unit (UPRA)
List the key representative involved in consultations (names and titles/positions)	
– Felipe Fonseca Fino, General Director, Rural Agricultural Planning Unit (UPRA).	
Describe main outcomes of consultation – feedback or inputs received	

<mark>Insert your text here</mark> – max 100 words	

Name of institution/organization #3	Secretary of Agriculture and Rural Development of Antioquia.
List the key representative involved in consultations (names and titles/positions)	
<td colspan="2">   – Andrea Campuzano Becerra, Director Productive Capacities and Income Generation   – Daniel Alberto Aguilar Corrales, Technical Director Efficient Use of Soil and Adaptation (UPRA).   – Jaime Alberto Garzón Araque, Secretary of Agriculture and Rural Development of Antioquia.   </td>
Describe main outcomes of consultation – feedback or inputs received	
<mark>Insert your text here</mark> – max 100 words	

4.2. Engagement strategy

4.2.1. Identify target audiences

Identify potential users of your research findings – institutions/organizations that may use your findings to inform, advise or influence policy or other relevant decision-making processes. Please explain why you believe these institutions/organizations are the most important potential users of your research, to inform relevant development/policy decisions.

Name of institution/organization #1	Departamento Nacional de Planeación (DNP) Gustavo Hernández Sub director of sector studies and regulation of the DNP
Explain relevance of this user to inform key decisions	
<td colspan="2">DNP has as one of its objectives the design, orientation and evaluation of public policy in Colombia, so the monitoring and evaluation of public policies in the rural sector by the academy are a fundamental input for decision making.</td>

Name of institution/organization #2	Departamento Nacional de Planeación (DNP) Diego Mora Sub director of production and rural development of DNP
Explain relevance of this user to inform key decisions	

DNP has as one of its objectives the design, orientation and evaluation of public policy in Colombia, so the monitoring and evaluation of public policies in the rural sector by the academy are a fundamental input for decision making.

Name of institution/organization #3	Minister of Agriculture
Explain relevance of this user to inform key decisions	
For the Ministry of Agriculture it is important to know serious studies from the academic sector that show the impact of public policy, especially in the post-conflict period where there is a great interest in the recovery of growth of the agricultural sector and income of rural households.	

Name of institution/organization #3	Sociedad de agricultores de Colombia (SAC) Alejandro Vélez Technical vice president of SAC
Explain relevance of this user to inform key decisions	
For SAC it is necessary to recover the growth of industrial agricultural activities in the post-conflict period. For SAC, therefore, it is a priority to know the different studies that are being carried out in the academic sector, in order to identify if the policies designed by the government are being effective.	

4.2.2. Define outreach and engagement strategy

How, <u>from proposal design to the dissemination of your research results</u>, will you consult and communicate with these users to both gather their inputs and keep them informed of your project, in order to increase chances of research uptake?

It is expected to have constant communication with these users through interviews, visits and presentation of progress and results of the project. In order to receive feedback at all stages of the project.

4.2.3. Outline your preliminary dissemination strategy

Outline your <u>preliminary</u> dissemination strategy (channels, tools, events, audiences, etc.).

Note that PEP expects grantees to disseminate information about their research work and (expected) outcomes throughout the project cycle, and not only after publication.

We will participate in different academic events through lectures and conversations in the academic sector. It is important to mention that given the post-conflict situation in Colombia there is a great interest in the academy and in the public sector on different works that reflect the effects of peace.

SECTION V – OTHER CONSIDERATIONS

5.1. Describe any ethical, social, gender or environmental issues or risks that should be noted in relation to your proposed research project.

There are no ethical, social, gender or environmental issues or risks related to this research that we are aware of.

5.2. References and plagiarism:

Applicants should be very careful to avoid any appearance of plagiarism. Any text of five or more consecutive words that is borrowed from another source should be carefully contained between quotation marks with a reference to the source (including page number) immediately following the quotation. It is essential that we be able to distinguish what you have written yourself from what you have borrowed from elsewhere.

Note also that copying large extracts (such as several paragraphs) from other texts is not a good practice, and is usually unacceptable. For a fuller description of plagiarism, please refer, for example, to the following website:

- http://writing.yalecollege.yale.edu/advice-students/using-sources/understanding-and-avoiding-plagiarism

PEP will be using a software program to detect cases of plagiarism.

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