

INTRODUCTION AND OVERVIEW

The African Growth and Development Policy (AGRODEP) Modeling Consortium aims to create a critical mass of leaders among African experts in the study of strategic development issues and the broader agricultural growth and policy debate in Africa. AGRODEP promotes access to state-of-the-art economic modeling tools to enable high-quality, locally-based research; facilitate access to existing datasets and improve the quality of such datasets; and support collaboration among African researchers and their peers outside Africa. By sharing core economic models; establishing a central Web-based database for statistical, economic, and geospatial data; and combining a network of experts with a community of practitioners, AGRODEP equips participating African researchers with the tools to perform science-based research and help address locally relevant agriculture-related challenges through sound policies.

As the AGRODEP Modeling Consortium enters its fourth year, the project has established and continued to strengthen the critical elements for the achievement of its goals. The first year saw the formation of the AGRODEP Modeling Consortium and its governance bodies, the various components, web portal development, staffing, and launching of several network activities. The implementation of the grants program, the training program, and outreach materials are among the highlights of the second year. The third year of the project (October 2012 – September 2013) saw further significant progress in the continuation of the activities initiated in the first two years and also in new activities that were introduced in the third year. The highlights of the Consortium’s achievements during the third year of the project include the following:

- Development of 2013 Work plan (approved by the Steering Committee in November 2012)
- Annual meetings of the Steering Committee and Scientific Advisory Board in November 2012
- Members’ workshop in November 2012
- Implementation of the fourth and fifth AGRODEP membership rounds in October 2012 and March 2013, respectively
- Launch of the Technical Notes series (includes model documentation) in November 2012
- Data warehousing: 39% increase in number of datasets in the AGRODEP data portal
- Awarding of special award for excellence in 2012 publications
- Completion of 8 training courses in 2012 and of 7 training courses in 2013
- Launch of seed fund grants for research associated with 2013 training courses
- Launch of second call for grants for gaps in research in July 2013

- Launch of second call for grants for innovative research in August 2013
- Approval of grants for research valorization to eight AGRODEP members
- Release of the second paper in the AGRODEP Working Paper series
- Monthly releases of the AGRODEP Newsletter or the AGRODEP Bulletin
- Virtual meeting of the Steering Committee in July 2013
- Implementation of Affiliate Membership, member de-selection, and Friends of AGRODEP

A brief review of past activities and the work plan for 2014 is presented for each of the AGRODEP components in the next four sections: (1) Modeling Infrastructure; (2) Data Infrastructure; (3) Membership, Research Networking, and Capacity Building; and (4) AGRODEP Coordination and Governance. The quarterly chronogram in Annex I provides a summary of when specific activities will be conducted in 2014, with asterisks indicating the quarters when concrete deliverables are expected from each activity.

1. MODELING INFRASTRUCTURE

The AGRODEP modeling infrastructure aims to provide Consortium members access to a set of high-quality, adapted tools that can be used to address their respective research needs as dictated by demand emanating from country- and regional-level priorities.

Highlights of Past Activities

By the end of 2013, the key project milestones have been achieved in terms of model development. The initial plan for the AGRODEP (phase I) project was to have 3 generic models (1 global CGE, 1 single country CGE and 1 multi market PE) adapted to different countries and regions. These models were aimed to be static, except for the global CGE, and deterministic. Currently, the model library has 1 global CGE, 2 single-country CGE models, including one which has basic and advanced dynamic features, and 2 multi market PE models (1 focusing on trade and trade negotiations and 1 on complex global value chains). In addition, one framework (RECS toolbox) for complex stochastic (single country-single commodity) models has been added, as well as different econometric tools and models. Documentation for most of these new models are provided in the AGRODEP Technical Notes series.

- *Multi country, multi sector general equilibrium model*: a specific version of the global MIRAGE model, MIRAGRODEP, has been developed to facilitate capacity building activities. GAMS codes are available.
- *IFPRI Single country, general equilibrium models*: Improved GAMS code and documentation for the IFPRI standard model have been produced.
- *PEP Single country, general equilibrium model*: GAMS code and documentation for a specific version of the PEP single country static (PEP 1-1) and dynamic (PEP 1-t) CGE models have been produced.
- *Multi-market partial equilibrium model*: The Export Restrictions And import Tariffs Overall impacts (ERATO) model illustrates how a multi-market model can be used to analyze trade

policy options in the context of a multi-product value chain. GAMS code and model documentation (AGRODEP Technical Note #3) are available.

- Partial equilibrium trade model: The PE-TRADE model can be used for analyzing the implications of various trade policies and providing support to the trade negotiators at a detailed level. Excel files and model documentation AGRODEP Technical Note #7) are available.
- Econometric models of trade: Literature review (AGRODEP Technical Note #4) and STATA model code and documentation (AGRODEP Technical Note #5) for a gravity-type model are available.
- Poverty analysis: Top down approach for GE and PE: Documentation, STATA and GAMS codes for poverty analysis using household survey and simulation model results or exogenous price shocks using a top down approach are available in the Micro-Macro Distributional Analysis Toolbox (AGRODEP Technical Note #9).
- Stochastic Partial Equilibrium: Storage, and price stabilization: Documentation, solver, and model code examples for PE models on price stabilization and storage policy with perfect expectation in the Rational Expectations Complementarity Solvers (RECS) Toolbox ((AGRODEP Technical Note #6).

Models: Work Plan for 2014

In 2014, the Modeling Component will complete several models that are already in progress. For 2014 and 2015, the Modeling Component will focus more on increasing the AGRODEP members' ownership and usage of the available models. This will be done through better documentation, examples, and tools and training to help to facilitate the use of these models and their adaptation to specific country, regions and research questions. Along with that, important model innovations will still be carried out to ensure that state-of-the-art tools are available for key research questions.

Completion of models that are already in progress:

- Spatial Partial Equilibrium Model: Documentation and GAMS code will be completed (Q1);
- Endogenous Saving behavior in CGE: The conceptual framework is finalized and a single country version of the CGE model based on the PEP model will be completed (Q1).
- Impact Assessment Tool Box: Improve packaging of materials that are already available in the Impact Evaluation training course section of the website (Q2);
- Econometrics of price transmission: Temporarily postponed to devote more efforts to the supply elasticity analysis/estimations. A new methodological document will be developed (Q2);
- A GLOBIOM model for AGRODEP: The features of the GLOBIOM model adaptable for an AGRODEP version and the scope of work for the IIASA team are still being discussed (Q3-Q4);
- Regional Computable General Equilibrium Model: documentation and GAMS code for a regional CGE based on MIRAGRODEP. The model focuses on expanding standard multi-country CGE to handle market integration in factor (capital) and goods (domestic variety)

markets. The ECOWAS version will be uploaded in 2014 when the SAMs are ready (finalization stage in the data module) (Q2-Q3).

Toolboxes to support model adjustments to local conditions:

- A toolbox for demand elasticity estimations (from the household level to the national level);
- A toolbox for Social Accounting Matrices (SAMS) manipulations for CGE: tool for updating SAMS, disaggregating them, and reconciling heterogeneous SAMs to develop coherent regional SAMs. It is a first stage aimed to deliver by 2015, an open source code allowing to develop and maintain a “GTAP-like” dataset for Africa countries by AGRODEP members;
- A toolbox for consistent policy aggregators and measurements when modelers and analysis are facing heterogeneous policy instruments. In 2014 the focus will be put on trade policies (e.g. computation of mercantilist trade restrictiveness index, application of the concept to preferential trade, consistent aggregator for trade policy analysis as proposed by Laborde, Martin and Van Der Mensbrugge 2012 etc.) before being extended to farm and fiscal policies in 2015.
- A toolbox on Food and Nutrition Indicators for the CGE and PE models. It will help to assess the nutritional contents of production, consumption and trade for the different models of the library and will generate useful indicators in terms of food and nutrition security.

Each toolbox will include one, or several, methodological papers tackling the theoretical and empirical questions addressed by the toolbox and codes used to implement the solutions proposed. In addition, several aspects of these different toolboxes will focus on linking strongly the modeling and data components.

Modeling innovations and developments:

- New stochastic commodity model based on an extension of the RECS toolbox to analyze intra-annual (e.g. monthly or seasonal) issues (e.g. storage, trade policy volatility). Providing intra-annual modelling tools are critical to tackle the problems faced by the farm sector and the food system as a whole since crisis are often concentrated over a short period of time, where both policy responses and structural constraints (about information, infrastructure etc.) are very specific. The activity will start in 2014 and will be completed in 2015.
- New Macroeconometric model. This is a currently a missing piece in the AGRODEP toolbox when they are both needed to tackle dynamic macroeconomic issues and widely used by some national institutions in Africa. A review of literature, program codes, and an illustrative example will be developed.
- Extension of the MIRAGRODEP-RI model to tackle additional aspects of the regional integration process in Africa. Two sub-features will benefit from specific developments: **labor market** integration (and worker migrations), and **monetary** integration (sub-regional current account constraints).

2. DATA INFRASTRUCTURE

The Data Component brings together statistical, economic and geospatial data in one central clearinghouse with a data portal. It provides links to existing key data sources, complements these sources as necessary, and develops shared standards, formats, and exchange protocols that would facilitate access by Consortium members to high quality and consistent datasets.

Highlights of Past Activities

By the end of 2013, the Data Component has achieved the initial milestones for AGRODEP (phase I) project which involves development of the web-based data portal and warehousing of Social Accounting Matrices (SAMs). The activities of the Data Component have been classified into three major types: set-up activities, data warehousing, and data construction projects. Set-up activities were realized in the first two years of the project. Data warehousing is an on-going activity which was implemented as soon as the web-based data portal was launched in October 2011.

- ***Set-up Activities:*** The set-up activities were realized during the first two years of the project. This includes the establishment of the component (data sources and data stocktaking), construction of the web-based data portal, posting of available data, and development of data standards and protocols.
- ***Data warehousing:*** The data warehousing activities include the range of procedures that are performed on various data sets from data acquisition to dissemination to members via the web data portal. Data acquisition efforts have been focused on broad data categories, namely: national agricultural statistics, international data sets, household survey data, social accounting matrices (SAMs), and socio-economic development indicators. Datasets were steadily added to the AGRODEP Data Catalog over the last three years to its current total of almost 250 datasets.

Data: Work Plan for 2014

In 2014, the Data Component will continue with the data warehousing activity, especially of SAMS, and with data construction projects. Under the *Data Construction* activity, the Data Component will engage in special data construction projects that are designed to compile specific datasets for the models in the AGRODEP library, based on identified data gaps. These projects will be implemented by the AGRODEP data team in collaboration with the Modeling team and with AGRODEP partners or external consultants. Grant contracts will be designed for these activities in coordination with the Network Component. The specific targets for 2014 are:

Data Warehousing: Social Accounting Matrices (Q1-Q4)

- Catalog data (new and updated) and documentation for SAMs for at least 2 African countries each quarter. This pertains to SAMs that are already available elsewhere but not yet in

AGRODEP's Data Catalog. Incentives will be provided for SAM data validation and documentation.

Data Construction Projects

- Develop and document 1 new SAM per quarter (*Q1-Q4*). This pertains to SAMs that have yet to be developed or updated and documented to fill a data gap. Collaborators will be identified and grants will be provided to fund development of missing SAMs.
- Assemble and document 1 complete dataset for a specific model in the AGRODEP Model Library per quarter (*Q1-Q4*). The Data Component will work in collaboration with the Model Component to provide complete datasets to support specific models such as: gravity models, multi-market models, and regional CGE models.

3. MEMBERSHIP, RESEARCH NETWORKING, AND CAPACITY BUILDING

The Network Component of AGRODEP promotes access to and use of the modeling tools and data and facilitates collaborative research among members and with other leading African scientists and their peers outside Africa. The ultimate goal is to build a dynamic research community for the members.

Highlights of Past Activities

In 2013, the Network Component continued to implement activities that were launched in 2011 and 2012 and engaged in new activities that were initiated in 2013. Most significant of the membership and capacity-building activities in the past three years are the following:

- *Membership Extension*: Through five rounds of membership calls, AGRODEP membership has reached 147 members, 43 female and 104 male, from 29 countries in Africa. Instead of spreading out recruitment of members over the life of the project, membership extension was accelerated in the first three years so that most members can avail for membership benefits over several years.
- *Training Courses*: Ninety-eight AGRODEP members were provided with training in the eight training courses delivered in 2012 and seven training courses in 2013. Trainings include topics on survey data, CGE models, poverty analysis, impact evaluation, and econometric modeling. In 2013, seed-fund grants have been awarded for research based on tools from the training courses.
- *Grants program*: Twelve grants for innovative research that were awarded to AGRODEP members in 2011/2012 are either completed or nearing completion. Another three grants were awarded to non-AGRODEP members to cover gaps in research are also being finalized, Seven proposals were recently granted funding under the 2013 call for grants for innovative research and one proposal was granted funding under the 2013 call for grants for gaps in research. Research valorization grants have been awarded for members to present their research in conferences.

Network: Work Plan for 2014

In 2014, the Network Component will continue to implement training courses and grant program activities, monitor member's network activities, and implement new AGRODEP network membership categories. The planned outputs are as follows:

Membership Review (Q1)

- Members' participations to AGRODEP activities are reviewed every two years and a list is proposed to the Steering Committee (SC) for de-selection of inactive members. In 2014, AGRODEP will undertake a review of activities of members who have joined the consortium before 2012.

Network Advisory Committee (NAC) Virtual Meeting (Q2)

- Organize a virtual meeting for the NAC to discuss and provide advice on the 2014 networking activities.

Training Activities (Q1-Q2-Q3-Q4)

- Implement eight training courses amongst a list of proposals submitted by AGRODEP partners.
- Monitor and evaluate AGRODEP training courses organized in 2014.
- Implement seed-fund grants for each training course.
- Develop a new training program for 2015.

Grants for Innovative Research (Q2)

- Monitor progress of the Innovative Research projects funded by AGRODEP.
- Launch the third call for grant proposals for innovative research and award grants for 2014-15 (Q2).

Grants for Gaps in Research (Q3)

- Monitor progress of the Gaps in Research projects funded by AGRODEP
- Launch the third call for grant proposals to address research gaps and award grants for 2014-15 (Q3).

Research Valorization Grants (Q1-Q2-Q3-Q4)

- Promote the visibility of members through support and incentives for participation in national and international conferences and publication in peer-reviewed journals.

Working Paper Series (Q1-Q2-Q3-Q4)

- Increase publication activities with an objective of 10 publications in 2014 including the outcome of the AGRODEP funded projects.

Development of the networks of experts (Q1-Q2-Q3-Q4)

- Continue to organize AGRODEP members around specific networks of experts. Strengthen the development of the network of experts on the impact evaluation of agriculture development policies; launch the network of expert on the foresight and projection of agriculture growth and food security in Africa. Continue to involve scholars into the specialized or “Ad Hoc” workshops.

Members' Website Activities (Q1-Q2-Q3-Q4)

- Strengthen online interaction and resource sharing (Blog and Wiki) among members in the new website. At least eighty per cent of members should have regularly logged and used the Blog or the Wiki by the end of 2014. Applications to AGRODEP funded activities by AGRODEP members will continue to be carried out throughout the website.

Affiliate Membership Extension (Q1-Q2-Q3-Q4)

- AGRODEP will accept applications for affiliate membership at any time in 2014; interested candidates will be invited to fill out an online application form; in addition, AGRODEP will extend an invitation to become an affiliate member to every AGRODEP member who leaves Africa. In 2014, AGRODEP is aiming to extend the Affiliate Membership to 20-30 researchers, one-third of which should be female researchers.

Implementation of the Friends of AGRODEP (Q1-Q2-Q3-Q4)

- A selection committee primarily composed of the AGRODEP Management Team will be implemented; individuals or institutions that have made significant contributions to AGRODEP within the past years will be identified and invited to join the group.

Contribution of Partners (Q1-Q2-Q3-Q4)

- Stocktaking on partners' strengths in modeling and data work through an effective implementation of the “Friends of AGRODEP” to guide future implementation of the workplan (training, mentoring, review activities, development of the network of experts, etc.).

4. COORDINATION AND GOVERNANCE

The management team of AGRODEP supervises and coordinates the three main Components of the project: Data, Models, and Network. In 2014, the AGRODEP management team will continue performing the coordination and communication activities that were began at project inception. In addition, the AGRODEP management team will also work on the co-organization of the 2014 GTAP conference to be held in Dakar in June 2014.

- *Cross-Component Collaboration (Q1-Q2-Q3-Q4)*: AGRODEP management will coordinate the activities and ensure communications across the three Components. Regular coordination meetings are held monthly and are attended by all AGRODEP Management team members and Component Coordinators.

- *Interaction with Governance Committees (Q1-Q2-Q3-Q4):* AGRODEP management will continue to interact with the Scientific Advisory Board and the Steering Committee; will circulate relevant documents for information, input, or approval; and provide support for the organization of SC and SAB meetings.
- *Organization of Annual Meetings (Q4):* Organize the meetings of the SC, SAB, and NAC during the last quarter of 2014 to discuss and provide advice on all AGRODEP activities.
- *Newsletters (Q1-Q2-Q3-Q4):* Produce monthly issues of the AGRODEP Newsletter except on months when the AGRODEP Bulletin are issued.
- *Quarterly Update (Q1-Q2-Q3-Q4):* The AGRODEP Quarterly Update series is produced every quarter to provide regular summary updates about AGRODEP developments to the Governance Committees.
- *AGRODEP Bulletin (Q1-Q2-Q3-Q4):* Produce four issues of the AGRODEP Bulletin (first volume on February 15, second volume on May 15, third volume on August 15, fourth volume on November 15).
- *Organization of the 2014 GTAP Conference in Dakar on June 2014 (Q1-Q2):* The AGRODEP Management Team will work on the organization of this big and important conference: logistics, design of the scientific program, funding.

Annex I: 2014 AGRODEP Quarterly Chronogram

| Activity\Period | Q1 | Q2 | Q3 | Q4 |
|--|----|----|----|----|
| MODELS COMPONENT | | | | |
| Spatial Partial Equilibrium Model | * | | | |
| Endogenous Saving behavior in CGE | * | | | |
| Impact Assessment Tool Box | | * | | |
| Econometrics of price transmission | | * | | |
| A GLOBIOM model for AGRODEP | | | * | * |
| Regional Computable General Equilibrium Model | | * | * | |
| Toolbox on Demand Elasticity Estimation | | * | * | |
| Toolbox: SAM manipulation and database management | * | * | | |
| Toolbox: consistent policy aggregators & measurements | * | * | | |
| Toolbox on FNS indicators for CGE and PE models | * | | | |
| Working paper on single country CGE (uses, implementation) | * | | | |
| Infra-annual stochastic PE model based on the RECS toolbox | * | * | * | * |
| Macroeconometric model in the context of African economies | * | * | | |
| MIRAGRODEP-RI: Labor Market Integration | | | * | |
| MIRAGRODEP-RI: Monetary Integration | | | | * |
| DATA COMPONENT | | | | |
| Data Warehousing: Social Accounting Matrices (SAMs) | * | * | * | * |
| Data Construction: Development of SAMs | * | * | * | * |
| Data Construction: Building datasets for specific models | * | * | * | * |
| NETWORK COMPONENT | | | | |
| Membership Review | * | | | |
| NAC Virtual Meeting | | * | | |
| Training Activities | * | * | * | * |
| Grants for Innovative Research | | * | | |
| Grants for Gaps in Research | | | * | |
| Research Valorization Grants | * | * | * | * |
| Working Paper Series | * | * | * | * |
| Development of the networks of experts | * | * | * | * |
| Members' Website Activities | * | * | * | * |
| Affiliate Membership Extension | * | * | * | * |
| Implementation of the Friends of AGRODEP | * | * | * | * |
| Contribution of Partners | * | * | * | * |
| COORDINATION AND GOVERNANCE | | | | |
| Cross Component Collaboration | * | * | * | * |
| Interaction with Governance Committee | * | * | * | * |
| Organization of Annual Meetings | | | | * |
| Newsletters | * | * | * | * |
| Quarterly Updates | * | * | * | * |
| AGRODEP Bulletin | * | * | * | * |
| Organization of the 2014 GTAP Conference | | * | | |

