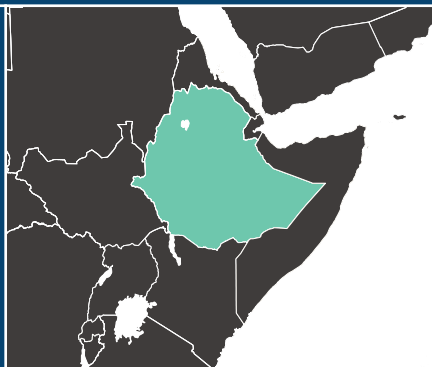


# policy

March 2015

INTEGRATION OF  
THE SPECTRUM SUITE  
MODEL INTO THE  
REPRODUCTIVE HEALTH  
AND POPULATION STUDIES  
PROGRAM CURRICULA  
AT THE UNIVERSITY OF  
GONDAR, ETHIOPIA



*Successes and  
Lessons Learned*

This publication was prepared by Yadira Almodóvar-Díaz  
and Aragaw Lamesgin of the Health Policy Project.

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# Integration of the Spectrum Suite Model into the Reproductive Health and Population Studies Program Curricula at the University of Gondar, Ethiopia

*Successes and Lessons Learned*

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**MARCH 2015**

This publication was prepared by Yadira Almodóvar-Díaz and Aragaw Lamesgin of the Health Policy Project.

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## **ABBREVIATIONS**

ABoFED	Amhara Bureau of Finance and Economic Development
BoFED	Bureau of Finance and Economic Development
DemProj	Demographic Projection
EPHA	Ethiopia Public Health Association
FP	family planning
HPP	Health Policy Project
MCH	maternal and child health
MoFED	Ministry of Finance and Economic Development
RAPID	Resource for Awareness of Population Impact on Development
RH	reproductive health
USAID	U.S. Agency for International Development



# INTRODUCTION

Since 2012, the USAID-funded Health Policy Project (HPP), in partnership with the Ethiopia Public Health Association (EPHA), has trained 52 public health professionals from government entities, universities, and nongovernmental organizations (NGOs) in the use of the Spectrum Policy Modeling System suite of tools. The main objective is to increase local capacity for using modeling tools to project family planning (FP), reproductive health (RH), maternal and child health (MCH), and HIV-related service needs at the regional and national level. Through the evidence generated, policymakers, program managers, and subject-matter experts can inform policy and programmatic decisions to fill the identified gaps and unmet needs.

Driven by the vision of furthering this initiative, four faculty members from the Department of Reproductive Health at the College of Medicine and Health Sciences, the Department of Population Studies in the Faculty of Social Sciences, and the Institute of Public Health at the University of Gondar developed a proposal to integrate four Spectrum Model tools—DemProj, FamPlan, RAPID, and LIST—into the Master of Public Health (MPH) and Master of Science (MSc) curricula. Two courses were developed or updated: *PuHe717: Family Planning and Population Studies* (now titled *PuRh8032: Family Planning Population Studies*) and *PORH 621: Population and Development: Theories and Integration*. The courses include interactive lectures, small group assignments, and the application of Spectrum tools to a set of scenarios using the 2011 Demographic and Health Survey data and other resources. More than 68 students have taken these courses and developed critical modeling and data analysis skills, which will advance their careers as public health leaders.

This report summarizes the process followed, as well as successes and lessons learned from the integration of Spectrum tools into the academic curricula at the University of Gondar. The authors hope that sharing this experience will inspire other academic institutions to integrate modeling tools like these into their public health curricula to expand students' analytical skills and ability to translate data into policy and program recommendations. Section I of this report describes the methodology applied to collect and analyze the information presented in this report. Section II summarizes the process implemented by the University of Gondar to develop the two courses and integrate Spectrum into the curricula. Section III describes success stories and lessons learned, and Section IV contains recommendations.

## **METHODOLOGY**

In August 2014, two HPP staff members conducted semi-structured interviews with three professors and department heads from the University of Gondar. These faculty members had led the integration of the Spectrum Suite into two new or updated courses in the Reproductive Health and Population Studies department of the MPH and the MSc programs. Individual interviews were also conducted with three MPH alumni who took these courses between 2012 and 2013.

The interviews were intended to document the experience of integrating Spectrum into the curricula, to identify key successes and lessons learned, and to draw useful recommendations for individuals and organizations interested in replicating this initiative. Annex A includes the list of interviewees, and Annexes B and C include the interview guides used for faculty and alumni, respectively.

The materials designed and used in these courses were also analyzed. They include the course syllabi; the adapted FamPlan, DemProj, and RAPID training modules; and the 11 scenarios students were given to generate and present their findings during their course work.

# INTEGRATION OF THE SPECTRUM POLICY MODELING SYSTEM TOOLS INTO THE ACADEMIC PROGRAM

Demographic changes and population growth are among many critical issues affecting Ethiopia’s economic, political, and social development. In 2008, to understand the factors driving these changes and project future trends, the Amhara Bureau of Finance and Economic Development (ABoFED) and the Federal Ministry of Health (FMOH) hosted the first regional Spectrum Policy Modeling System training. The objective was to use these tools to project demographic changes and assess the need for FP, RH, and MCH services. Staff from ABoFED, FMOH, and other governmental organizations, as well as participants from academic institutions such as the University of Gondar, participated in this event. Following the training, however, the tools were not widely used.

In 2012, HPP and EPHA saw an opportunity to revitalize the use of Spectrum in Ethiopia by organizing a training in Adama. A total of 18 participants—including program managers and technical staff from the FMOH, the Federal Ministry of Finance and Economic Development, Addis Ababa University’s Population Studies Department, the University of Gondar, EPHA, Population Health and Environment Ethiopia Consortium, and HPP—completed the five-day training. The session generated considerable excitement about using the Spectrum tools for future planning purposes, and the University of Gondar faculty saw an opportunity to expand the use of Spectrum by integrating it into coursework for students pursuing MPH and MSc degrees. Under the leadership of professors Getachew Nibret, Gizachew Assefa, Dr. Abebaw Gebeyehu, Zelalem Birhanu, and Nega Mihret (the head of the Department of Population Studies), a proposal to develop or adapt two courses was presented and approved by the university’s Curriculum Advisory Committee.

**Table 1: Training and Integration Timeline**

<b>May 2008</b>	First regional Spectrum Policy Modeling System training hosted by the ABoFED and MOFP in Gondar
<b>August 2012</b>	National Spectrum training hosted by HPP and EPHA in Adama, Ethiopia
<b>September 2012</b>	New Family Planning and Population Studies and Population and Development courses developed
<b>October–November 2012</b>	First cohort of students trained
<b>November 2012</b>	Revision of the course materials based on students’ input
<b>November 2012–February 2013</b>	Second cohort of students trained
<b>December 2013</b>	Spectrum refresher training for new master trainers hosted by HPP and EPHA in Bahir Dar
<b>March 2014</b>	Second Spectrum refresher training hosted by HPP and EPHA in Bahir Dar and co-facilitated by master trainers from Gondar University’s faculty
<b>September–October 2013</b>	Third cohort of students trained

## New Courses Integrating Spectrum

In August 2012, the content for the *PuHe 717: Family Planning and Population Studies* course was revamped to introduce students to population theories that play a significant role in shaping both research and policy-making processes in Ethiopia. It also integrated development theories and frameworks and

their relationship to population and socioeconomic changes. This four-credit course was designed to be offered over a two-week period using a mix of lectures, discussions based on assigned readings, and individual analysis of scenarios using DemProj, FamPlan, and RAPID (depending on the case presented). The data for these tools comes from the *Ethiopia 2011 Demographic and Health Survey*. The training guides provided by HPP and EPHA were adapted for use as complementary materials and the course title was changed to *PuRh8032: Family Planning Population Studies*. The revised syllabus and teaching tools went through several cycles of internal review and refinement until final approval was received. Initially, five scenarios were developed to be modeled by the students. Based on the initial feedback received from students and on lessons learned from the course facilitation, the scenarios were expanded to a total of 11 using different combinations of proximate determinants for family planning and population growth goals.

The first cohort of 11 MPH students completed the course in October 2012. Based on their feedback, small adjustments were made to the materials. A second cohort of 11 students participated in *PuRh8032* and two additional courses on maternal and child health and adolescent sexual and reproductive health were held over six weeks in December 2012. Other adjustments were made to the course materials, and the approach to applying the scenarios in small groups was changed to individual work. For the third cohort, each student was expected to individually enter their data into the software, perform the data analysis, and present the results, along with a logical justification of the conclusions drawn.

Given that the *PORH 621: Population and Development: Theories and Integration* course was already part of the MSc curriculum, the faculty decided to integrate the adapted Spectrum materials into the course syllabus. This three-credit course had a similar objective to *PuRh8032*: increasing students' knowledge and skills in assessing the interrelation between population and socioeconomic development. To date, a total of 18 students have completed the redesigned *PORH 621* course.

Based on the individual interviews, students who took either of the two courses expressed satisfaction with the overall content, the assigned readings, and the facilitation of the courses. They also found the tool-specific software to be user-friendly and appreciated learning about the importance of using complete, accurate, and reliable data to generate their analyses. Although some students wished to use other data sources for their analysis, the professors encouraged them, for teaching purposes, to use the content provided in the scenarios.

## **Revision of MPH Curriculum**

Since July 2014, the University of Gondar has undergone a thorough review of its MPH program curriculum. One key element being considered is integration of the Spectrum tools into one of the reproductive and child health track courses. Apart from DemProj and FamPlan, which are included in existing courses, other modules such as RAPID and ImpactNow have been added. The revised curricula also require that students develop special projects using these models.

## SUCCESSSES AND LESSONS LEARNED

Completing training for 68 MPH and MSc students in the use of Spectrum is one of the main successes of this initiative. Today, the University of Gondar has five Spectrum master trainers among its faculty, all with vast experience using FamPlan, DemProj, RAPID, LiST, and other modeling tools. They are among the highly skilled professionals who can provide technical advice to government agencies, donors, and members of various institutions in other sectors (such as planning and education) whose actions have an effect on population growth and health. HPP and EPHA have engaged these master trainers from the University of Gondar in regional and national Spectrum trainings, mentoring programs, and other initiatives.

The University of Gondar has shared easy-to-use materials such as training guides and scenarios, which can be used by other institutions. Most recently, the Alkan University College in Bahir Dar requested support from the University of Gondar in training one of its student cohorts on the use of Spectrum. As these instruments become more ubiquitous, it is expected that demand for more comprehensive, accurate, and updated data will increase and new strategies could be drawn from this experience.

Despite these successes, adaptation and refinement of these courses is ongoing. Additionally, six key lessons have been drawn based on reflection from faculty and students:

1. **Ensure buy-in from the head of the academic department prior to initiating the course development proposal.** At the University of Gondar, the head of the targeted academic department had been trained in Spectrum—a critical factor behind the rapid integration of the suite into coursework. As a result of his training, he championed the initiative. Moreover, the university was able to facilitate the integration of Spectrum training quickly and at a low cost because the training materials were readily available and easy to adapt, and the software was free to the university and students.
2. **Develop a clear teaching plan and test the course materials prior to introducing them into the academic program.** By following this approach, faculty were able to identify missing and confusing content and make adaptations in a timely manner.
3. **Gather students' feedback mid-way and at the end of the course.** Although the University of Gondar has not done this systematically, it is crucial for ensuring that students acquire the knowledge and develop the skills necessary to apply the tools and, most importantly, to interpret the information generated.
4. **Make internal arrangements to provide tailored support to students who have difficulties with the course content or the application of the tools.** This can be accomplished with one-on-one meetings with faculty, by encouraging students to work with peers, and by using new technology such as short YouTube videos that address specific challenges that students may experience while manipulating the tools.
5. **Establish a clear process to make revisions, improvements, and updates to the course materials.** The University of Gondar's clear internal process for making iterative adaptations for courses facilitates the integration of changes and other needed adjustments.
6. **Support faculty engagement in relevant activities. For example, they can serve as trainers for local, regional, and international projects that use Spectrum.** In this way, professors strengthen their skills, expand their networks, and share lessons learned with others in the field. This is also an opportunity for the university to obtain additional funding and research engagements, and gain visibility and name recognition.

## RECOMMENDATIONS

As shown by the University of Gondar, modeling tools like Spectrum are useful for increasing students' technical and analytical skills. As teaching instruments, they can be downloaded free of charge from the [HPP website](#). The readily available training manuals can be adapted and expanded, as the University of Gondar demonstrated.

To ensure success in integrating Spectrum tools into academic curricula, this initiative must be led by a faculty member or departmental director who has been trained on the use of these tools. These individuals provide valuable leadership in developing proposals for approval by internal curriculum revision boards, in facilitating courses, and in sustaining these initiatives.

## ANNEX A: LIST OF INTERVIEWEES

Name	Title
1. Mr. Gizachew Assefa	Head of the Reproductive Health Department, University of Gondar
2. Mr. Nega Mihiret	Head of the Population Studies Department, University of Gondar
3. Dr. Abebaw Gebeyehu	Director of the Institute of Public Health, University of Gondar
4. Mr. Belete Debebe	Lecturer at the Population Studies Department, University of Gondar
5. Ms. Meseret Abay	Former student at the Reproductive Health Department, University of Gondar
6. Mr. Yilikal Tilahun	Former student at the Reproductive Health Department, University of Gondar
7. Mr. Mekuraiaw Belachew	Former student at the Reproductive Health Department, University of Gondar

## **ANNEX B: INTERVIEW GUIDE WITH FACULTY**

1. **When did Gondar University decide to introduce the Spectrum tools into the academic curricula of the Department of Population Studies?** Who led this process? What training did he/she/they have on Spectrum? Who funded/hosted this training?
2. **Which Spectrum tools were adapted and for which course(s)?** Why were these prioritized? Have there been any changes made to the course(s)? Please describe. What did you hope students would get out of this course? Who are the students that have taken the course? How many students have taken the course(s)? How many times have you offered the course and for how many weeks? Is the course an elective or part of the core curriculum for graduation?
3. **What steps were followed to adapt the tools to the curriculum?** What was the specific internal process that took place to get this course approved?
4. **What have been the main results (successes)?** Has the course been evaluated? Who completed the evaluation? What were the main results? Have any of the trained students used Spectrum after completing the course? How?
5. **What have been the main challenges? How have they been addressed?**
6. **What are the top three lessons learned from the process of designing and integrating this course based on Spectrum into the academic curricula?**
7. **Is there something in the course or the way it has been promoted that could be improved?**
8. **What is the University of Gondar planning to do with the Spectrum tools in the future?**

Thank you for your time and the insights shared!



## **ANNEX C: INTERVIEW GUIDE WITH ALUMNI**

1. **Which academic program did you pursue at the University of Gondar?** When did you graduate? What type of work do you do now?
2. **Which course did you take that included the application of Spectrum tools?** Was this an elective or a core course for graduation? What did you get out of it? What was your experience with the course tools, training manual, and software? How was the course facilitation? Probe for the most and least useful content/elements of the course.
3. **Did you have the opportunity to evaluate the course?** What feedback did you provide? Probe for areas of improvement or expansion, and those areas that should be continued.
4. **Did you experience any challenges in the course? How were they addressed?**
5. **What would you say are some lessons learned from having taken this course? Have you used your knowledge and skills on modeling and applying Spectrum in your professional career?** Probe for interest/plans to use these tools in the future.
6. **Do you have any final comments you would like to share?**

Thank you for your time and the insights shared!

## **ANNEX D: SPECTRUM TOOLS USED FOR THIS INITIATIVE**

DemProj is a modeling tool that projects the population for an entire country or region by age and sex, based on assumptions about fertility, mortality, and migration. A full set of demographic indicators can be displayed for up to 50 years into the future. Urban and rural projections can also be prepared. A companion model, EasyProj, supplies the data needed to make a population projection from the estimates produced by the Population Division of the United Nations. Additional information is available at:

[http://futuresgroup.com/resources/software\\_models/spectrum#sthash.nPw2HZJ2.dpuf](http://futuresgroup.com/resources/software_models/spectrum#sthash.nPw2HZJ2.dpuf)

FamPlan is a modeling tool that projects family planning requirements needed to reach national goals for addressing unmet need or achieving desired fertility. It can be used to set realistic goals, to plan for the service expansion required to meet program objectives, and to evaluate alternative methods of achieving goals. The program uses assumptions about the proximate determinants of fertility and the characteristics of the family planning program (method mix, source mix, discontinuation rates) to calculate the cost and the number of users and acceptors of different methods by source. Additional information is available at:

[http://futuresgroup.com/resources/software\\_models/spectrum#sthash.nPw2HZJ2.dpuf](http://futuresgroup.com/resources/software_models/spectrum#sthash.nPw2HZJ2.dpuf)

RAPID: Resources for the Awareness of Population Impacts on Development. RAPID projects the social and economic consequences of high fertility and rapid population growth for such sectors as labor, education, health, urbanization, and agriculture. This program is used to raise policymakers' awareness of the importance of fertility and population growth as factors in social and economic development.

Additional information is available at:

[http://futuresgroup.com/resources/software\\_models/spectrum#sthash.nPw2HZJ2.dpuf](http://futuresgroup.com/resources/software_models/spectrum#sthash.nPw2HZJ2.dpuf)

Lives Saved Tool (LiST- Child Survival) is a program to project the changes in child survival in accordance with changes in coverage of different child health interventions. Additional information is available at:

[http://futuresgroup.com/resources/software\\_models/spectrum#sthash.nPw2HZJ2.dpuf](http://futuresgroup.com/resources/software_models/spectrum#sthash.nPw2HZJ2.dpuf)



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