



FPESA

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Family Planning and Environmental Sustainability: Assessing the Evidence 2014

An Informal Report on 2014 Activities to FPESA Funders, Friends and Network Members

The Family Planning and Environmental Sustainability Assessment (FPESA) is a project of the Worldwatch Institute, based in Washington, DC. It responds to concerns in the environmental and family planning communities that 1) an evidence base justifying shared goals and strategic alliance is not well established or articulated, and that 2) the potential linkage of family planning and environment is of little interest outside a few countries. The project is supported by grants from the United Nations Foundation, the Turner Foundation, and the Wallace Global Fund. This report covers its first year and briefly sketches plans for its second.

Project objectives: The FPESA project seeks to identify and assess peer-reviewed scholarly literature published in the past decade that may provide evidence for or against the hypothesis that family planning benefits environmental sustainability. Secondly, the project seeks to build a diverse international network of researchers interested in studying, writing and speaking about the family planning and environmental sustainability linkage.

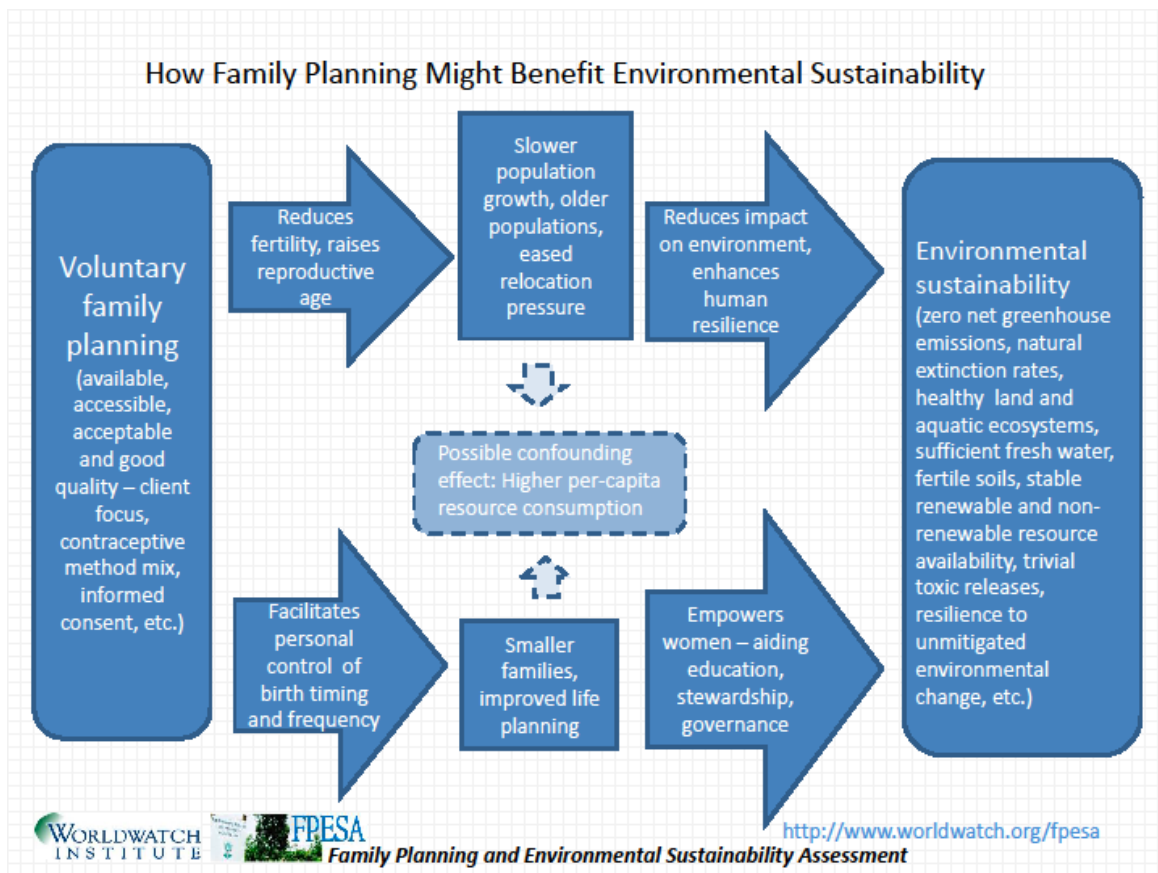
Project values: The project defines *family planning* as the voluntary use of contraception to achieve the reproductive intentions of users and their sexual partners. It considers research consistent with the exercise of reproductive and sexual rights and an acceptable quality of family planning services based on clients' needs, their reproductive and sexual health, and their informed consent.

The project defines *environmental sustainability* as the maintenance of key environmental conditions and supplies of natural resources required for future human health and well-being. (The survival value of ecosystems and species with no obvious human utility is seen as consistent with this definition, given the interconnectedness of all life and our imperfect understanding of these connections.) Such components of social sustainability as peace, personal

security and access to nutritious food and acceptable shelter are seen as likely preconditions for achieving environmental sustainability, as well as worthy goals in their own right.

Chronological summary, 2014: Worldwatch staff launched the Family Planning and Environmental Sustainability Assessment project in January 2014 with a planning phase. The project moved into an organizational phase in March, with a transition to its operational phase by late spring. Over the calendar year the project:

- hired a research assistant and engaged five consultants;
- articulated its purpose, mission and methodology;
- set up a Web page at <http://www.worldwatch.org/fpesa>;
- assembled a network of about two dozen research assessors plus a larger group of interested observers;
- developed a [conceptual framework](#) for its hypothesis and work (see illustration below);
- identified more than 200 peer-reviewed articles for possible assessment;
- developed a two-page standardized form for assessment of each article;
- distributed seven articles for full assessment by the researcher network;
- worked with two African think tanks in fundraising partnerships;
- published blogs on its work plus one journal article by the project director.



FPESA staff and consultants:

- Robert Engelman, project director
- Yeneneh Terefe, research assistant
- Vicky Markham, consultant
- Kenneth R. Weiss, consultant
- Kathleen Mogelgaard, consultant
- Joe Bish (Population Media Center), research monitor

Methodology: FPESA searches recent peer-reviewed scientific literature for articles published in 2005 or later (i.e., in the last decade) that include in their texts key words related to both fields. Among these are “population,” “family planning,” “demographic,” “gender,” and “reproductive” on the population and family-planning side; and “environmental,” “sustainable,” “sustainability,” and a variety of specific environmental terms such as “climate change,” “water scarcity” and “biodiversity” on the sustainability side. We use general reading, interviews with experts, Google Scholar and, through a partnership with Population Media Center, the Meltwater Group’s online media monitoring service to search recent scientific literature.

In 2014 we identified more than 200 articles that met our search criteria, each article peer-reviewed and published in 2005 or later and using search terms from both sides of the linkage. Only a small minority of these articles, however, actually analyzed connections between the two sides. Recognizing the improbability of identifying individual articles that specifically examine potential benefits of family planning to environmental sustainability, the project staff instructs assessors to consider the evidence for individual connections comprising the correlations and causative pathways hypothesized in the conceptual framework.

Those articles that in the FPESA staff’s view appear to offer evidence for these conceptual components became candidates for group assessment. From this much smaller group of published articles, which changes in size as new articles are identified, we selected a group of seven articles for network assessment in 2014. After the first two assessment rounds we began offering honoraria of US\$100 for each completed assessment to compensate network members for their time. Initially we distributed one article for assessment each week but later shifted to a biweekly distribution schedule. Following these two changes the response rate from the assessors’ group quadrupled from just over 8 percent to 33 percent by the end of the year. We request that network members return their assessments within two weeks of distribution, but we do not disqualify late assessments from consideration.

Assessors were selected through invitations initiated by project staff based on our personal networks, reading of relevant scientific literature and recommendations of experts interviewed. We made some invitations to authors of articles that especially impressed us with their quality and relevance to FPESA’s hypothesis. Some assessors self-selected by responding to an e-mail notice on the listserv of the [Population-Environment Research Network](#), sponsored by Columbia University’s Center for International Earth Science Information Network. Those correspondents who demonstrated their interest and experience in aspects of the linkage through correspondence and in Skype interviews with FPESA project staff were then invited into the network. The process of invitation and management of the network, which is continuing in 2015,

has been time-consuming and challenging. Some invitations failed to elicit responses, while others were accepted but with no subsequent participation in the assessments.

At the end of 2014 the project's network of assessors consisted of 24 individuals, 10 of these women, working on all inhabited continents except for Australia. Twenty of the assessors are either working in the developing world or, in two cases, are from developing countries but now working in developed ones. Career specialties, background and experience are diverse. Most members are academics focusing on research, but some work in non-governmental organization and/or do not engage directly in research. (We do, however, require assessors to have worked with or be familiar with peer-reviewed scientific research.) At least three members are graduate students in fields closely related to demography and the environment. Several others are professors, one of whom directs a population research program at a major university. The quality of assessments received has been generally quite high, with few exceptions. At the same time, more than half the network members have yet to submit an assessment, though several of these 2014 non-responders have told us they plan to be more active in 2015.

Members of the FPESA assessment network in 2014:

- Hezri Adnan; Program Director; Technology, Innovation, Environment and Sustainability Division; Institute of Strategic and International Studies; Kuala Lumpur, Malaysia
- Mary Agada, sociologist and agriculture extension specialist, Institute for Food Security, University of Agriculture, Makurdi, Nigeria
- Edward Amankwah, Executive Director, Centre for Environmental Governance, Accra, Ghana
- Alaka Basu, Professor and demographer, Cornell University, Ithaca, NY, and Senior Fellow, United Nations Foundation, Washington, DC, USA.
- Wanangwa Chimwaza-Manga, Programme Officer, Leadership for Environment and Development, University of Malawi, Zomba, Malawi
- Samuel Codjoe, Director, Regional Institute for Population Studies, University of Ghana, Legon, Accra, Ghana
- Javiera Fanta, doctoral candidate, demographic communication, Universidad de Córdoba, Córdoba, Argentina
- Bholá R. Gurjar, Professor and Coordinator, Environmental Engineering Group, Indian Institute of Technology, Roorkee, India
- Karen Hoehn, independent development consultant on reproductive health, Brussels, Belgium
- Gladys Kalema-Zikusoka, CEO and founder, Conservation Through Public Health, Kampala, Uganda
- Suman Kapur, Professor, Biological Sciences Department, Birla Institute of Technology & Science, Pilani, Hyderabad Campus, Andhra Pradesh, India
- Hafiz Khan, Senior Lecturer in Applied Statistics, Middlesex University, London, United Kingdom, and Visiting Fellow in Demography, Oxford Institute of Population Aging, Oxford University, Oxford, United Kingdom
- Sigrún María Kristinsdóttir, freelance journalist and independent anthropologist, Reykjavík, Iceland

- Lori Hunter, Professor and Associate Director, CU Population Center, University of Colorado, and Editor-in-Chief, *Population and Environment*
- Zena Lyaga, doctoral candidate, population studies, University of Nairobi, and independent monitoring and evaluation specialist in health, Nairobi, Kenya
- Ana Maria Majano, Associate Director of the Latin American Center for Competitiveness and Sustainable Development (CLACDS) at INCAE Business School in Costa Rica.
- Wilkister Nyaora Moturi, Senior Lecturer and Chair, Department of Environmental Science, Egerton University, Egerton, Kenya
- Casianes Olilo, Adjunct Lecturer, Department of Environmental Science, Egerton University, Kisumu, Kenya
- Laxmikant Paikray, independent anthropologist, Bhubaneswar, India
- Ramesh Poluru, Research Fellow, Public Health Foundation of India, New Delhi, India
- M. Abdur Rahaman Rana, Secretary, Bangladesh Research Initiatives of Environment-Society, and Executive Editor, Poribesh-Protibesh (Tri-monthly Environment Magazine), Chittagong, Bangladesh
- Sam Sellers, doctoral candidate, Curriculum for Environment and Ecology, University of North Carolina, Chapel Hill, North Carolina, USA
- Dirk Van Braeckel, Director, Finance and Administration, International Centre for Reproductive Health, Ghent University, Ghent, Belgium.
- Samson Wasao, Director of Research Programs, African Institute for Development Policy, Nairobi, Kenya

Some preliminary findings from work in 2014: Overall, the body of research that collectively could link family planning to environmental sustainability is thin. There is little sustained debate or interest among scientists and researchers in attempting to document the pathways from family planning to environmental sustainability that the FPESA project hypothesizes. Funding is evidently sparse, and the linkage offers little opportunity for professional advancement. As this is written, a peer-reviewed [article](#) in the journal *Science* has generated newspaper headlines that reaffirms and expands on earlier research suggesting that humanity is breaking past several key planetary boundaries for a “safe operating space for humanity.”¹ While the article makes no mention of human population, its conclusions underline the importance of considering the linkage FPESA is examining. Interest in the linkage may be expanding and diversifying. Many of the larger group of articles that FPESA staff have identified include authors who are women and/or based in developing countries.

Mentions of population growth and other demographic factors in the identified scientific literature is hardly routine, but neither is it uncommon. Mentions of family planning, by contrast, are uncommon. Mentions of women’s status, education and empowerment in the context of environmental topics are rarer still. One of the few such articles identified—[finding a significant correlation](#) between women’s representation in national parliaments and national ratifications of environmental treaties—was shared with the FPESA network for group assessment.² Submitting assessors generally felt the article was strong but established more of a correlation than a causal pathway from family planning through women’s empowerment to environmental sustainability.

(Establishing evidence of causation beyond correlation is one identified challenge in the assessed research, as for research on the linkage generally.)

The first article sent for group assessment was also arguably the best-known and cited [example of research on population and climate change](#) in the last decade, an analysis of demographic and carbon emission trends that projected significant savings of emissions from slower population growth between 2010 and 2050.³ Perhaps because it was offered first and prior to the offer of honoraria, the article received only two assessments in 2014—one of which criticized it for lack of clarity in describing its models and explaining its assumptions. The other considered it a strong piece of evidence for the hypothesis that slower population growth is likely to mean lower future trajectories of carbon emissions.

Another article that received a fair amount of attention on its publication found what it identified as a [probable causative role](#) population density and growth plays in loss of biological diversity.⁴ The article earned generally high praise from most of the assessors submitting. This was tempered by some criticism (potential bias in selection of geographic areas studied, for example, and lack of consideration of consumption factors) and suggestions for additional steps to strengthening the conclusion of causation.

One of the arguably most innovative [articles](#) considered the impacts of contraception on estrogen pollution in U.S. waterways.⁵ The authors analyzed data on different estrogens entering the waters via sewer systems from the use of oral and other contraceptives and hormonal replacement therapy, as well as from pregnancy. They concluded that the use of oral contraceptives, despite being based on estrogen, tends over time to reduce rather than increase estrogen pollution. Not only does contraception prevent significant pregnancy-related estrogen releases that result from unintended pregnancies, the authors concluded, but prevention of such pregnancies reduces estrogen pollution by future generations, which will be smaller than otherwise due to current contraceptive use.

One assessor suggested that by failing to quantify the estrogenic effects of natural family planning the authors displayed a bias in favor of artificial contraception. But this and the other assessors rated the article positively, while in some cases also suggesting improvements in its methodology and calling for comparable tests based on data from other countries.

Worldwatch will publish a fuller, though still preliminary, report on FPESA's preliminary findings later in 2015, which will more fully describe the articles and the assessment results. In addition to the four articles and assessments described briefly above, three other peer-reviewed articles were distributed in 2014 for assessment by the FPESA research network:

- John B. Casterline and Laila O. El-Zeini, June 2014, "Unmet Need and Fertility Decline: A Comparative Perspective on Prospects in Sub-Saharan Africa," *Studies in Family Planning*, vol. 45, no. 2, pp. 227-245. doi: 10.1111/j.1728-4465.2014.00386.x. Available online at <http://onlinelibrary.wiley.com/doi/10.1111/j.1728-4465.2014.00386.x/pdf>.
- Robert I. McDonald, 12 April 2011, "Urban Growth, Climate Change, and Freshwater Availability," *Proceedings of the National Academy of Sciences*, vol.

108, no. 15, pp. 6312–6317. doi: 10.1073/pnas.1011615108. Available online at <http://www.pnas.org/content/108/15/6312.full>.

- Corey J. A. Bradshaw and Barry W. Brook, 18 November 2014, “Human Population Reduction Is Not a Quick Fix for Environmental Problems,” *Proceedings of the National Academy of Sciences*, vol. 111, no. 46, pp. 16610–16615. doi: 10.1073/pnas.1410465111. Available online (abstract only without purchase or subscription) at <http://www.pnas.org/content/111/46/16610.abstract>.

Among the objectives of the FPESA project is to connect researchers and scholars around the world interested in connections between family planning and environmental sustainability, to encourage new research in the field, and to stimulate more public discussion and policy formulation on the linkage. While the first year of project activities was not the right time for maximizing publicity, the project and its staff did produce three articles related to its work, one of them jointly authored by the project director and a member of the FPESA research network.

In August, project director Robert Engelman described the project and its objectives in a [blog](#) posted on the New Security Beat, sponsored by the Wilson Center’s Environmental Change and Security Program. In September, a [blog](#) jointly authored by Engelman and FPESA researcher network member Samuel Codjoe on population and climate change was posted on the environmental news and commentary site Grist. Early summer saw an article on the same topic in the peer-reviewed *Georgetown Journal of International Affairs* by Engelman.⁶

FPESA 2015: The project is continuing to send articles for assessment while beginning to prepare for an interim report on preliminary conclusions of our evidence assessment. We will be honing the network with invitations to identified key researchers, and we will work toward 1) a network meeting and event in Washington late in the year, and 2) preparation of an article on the project’s findings for publication in a peer-reviewed scientific journal.

¹ Will Steffen et al., 15 January 2015, “Planetary Boundaries: Guiding Human Development on a Changing Planet,” *Science* (published online), doi: 10.1126/science.1259855. Available online (abstract only without purchase or subscription) at <http://www.sciencemag.org/content/early/2015/01/14/science.1259855>.

² Kari Norgaard and Richard York, August 2005, “Gender Equality and State Environmentalism,” *Gender and Society*, vol. 19, no. 4, pp. 506–522. doi: 10.1177/0891243204273612. Available online (abstract only without subscription) at <http://gas.sagepub.com/content/19/4/506.abstract>.

³ Brian C. O’Neill et al., 12 October 2010, “Global Demographic Trends and Future Carbon Emissions,” *Proceedings of the National Academy of Sciences*, vol. 107, no. 41, pp. 17521–17526. doi: 10.1073/pnas.1004581107. Available online (full paper) at <http://www.pnas.org/content/107/41/17521.full>.

⁴ Jeffrey McKee et al., October 2013, “Human Population Density and Growth Validated as Extinction Threats to Mammal and Bird Species,” *Human Ecology*, vol. 41, issue 5, pp. 773–778. doi: 10.1007/s10745-013-958-8. Available online (abstract only without purchase or subscription) at <http://link.springer.com/article/10.1007%2Fs10745-013-9586-8>.

⁵ Usman Khan and Jim A. Nicell, 26 March 2014, “Contraceptive Options and Their Associated Estrogenic Environmental Loads: Relationships and Trade-Offs,” *PLoS ONE*, vol. 9, no. 3: e92630. doi:10.1371/journal.pone.0092630. Available online at

<http://www.plosone.org/article/fetchObject.action?uri=info:doi/10.1371/journal.pone.0092630&representation=PDF>

⁶ Robert Engelman, Summer/Fall 2014, “Human Numbers and a Changing Climate,” *Georgetown Journal of International Affairs*, vol. 15, no. 2, pp. 10–15.