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ABOUT AJRH

African Journal of Reproductive Health (AJRH) is published by the Women's Health and Action Research Centre (WHARC). It is a multidisciplinary and international journal that publishes original research, comprehensive review articles, short reports and commentaries on reproductive health in Africa. The journal strives to provide a forum for African authors, as well as others working in Africa, to share findings on all aspects of reproductive health, and to disseminate innovative, relevant and useful information on reproductive health throughout the continent.

AJRH is indexed and included in Index Medicus/MEDLINE. The abstracts and tables of contents are published online by INASP at <http://www.ajol.info/ajol/> while full text is published at <http://www.ajrh.info> and by Bioline International at <http://www.bioline.org.br/>. It is also abstracted in *Ulrich's Periodical, Feminist Periodicals African Books Publishing Records*.

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The Women's Health and Action Research Centre (WHARC) is a registered non-profit organization, committed to the promotion of women's reproductive health in sub-Saharan Africa. Founded in 1995, the centre's primary mission is to conduct multidisciplinary and collaborative research, advocacy and training on issues relating to the reproductive health of women. The centre pursues its work principally through multidisciplinary groups of national and international medical and social science researchers and advocates in reproductive health.

WHARC receives core funding and support from the Ford Foundation and technical cooperation and mentorship from International Perspectives on Sexual and Reproductive Health and Studies in Family Planning. Principal funding for the journal comes from the Consortium on Unsafe Abortion in Africa. The goal of the centre is to improve the knowledge of women's reproductive health in Nigeria and other parts of Africa through collaborative research, advocacy, workshops and seminars and through its series of publications – the *African journal of Reproductive Health*, the *Women's Health Forum* and occasional working papers.

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APROPOS AJRH

La Revue Africaine de santé de la Reproduction (RASR) est publiée par le Women's Health and Action Research Centre (WHARC). C'est une revue à la fois pluridisciplinaire et internationale qui publie des articles de recherche originaux, des articles de revue détaillés, de brefs rapports et des commentaires sur la santé de la reproduction en Afrique. La Revue s'efforce de fournir un forum aussi bien à des auteurs africains qu'à des professionnels qui travaillent en Afrique, afin qu'ils puissent partager leurs découvertes dans tous les aspects de la santé de reproduction et diffuser à travers le continent, des informations innovatrices, pertinentes et utiles dans ce domaine de santé de la reproduction.

La RASR est indexée et figure sur l'Index Medicus/MEDLINE. Les résumés et les tables des matières sont publiés en ligne par INASP sur le site web <http://www.ajol.info/ajol> tandis que le texte est publié à <http://www.ajrh.info> par Bioline International sur le site web <http://www.bioline.org.br/>. Il est également résumé dans *Ulrich Periodical, feminist Periodical et African Books Publishing Records*

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Le WHARC est une organisation non gouvernementale à but non-lucratif s'engageé dans la promotion de santé de la reproduction chez la femme en Afrique sub-saharienne. Fondé en 1995, le Centre a pour objectif principal de mener des recherches pluridisciplinaires et en collaboration, de promouvoir et de former des cadres en matières relatives à la santé de la reproduction chez la femme. Le Centre travaille surtout à travers des groupes multidisciplinaires de chercheurs aussi bien nationaux qu'internationaux en sciences médicales et en sciences économiques dans le domaine de santé de la reproduction.

Le WHARC recoit une aide financière principale de la Fondation Ford et bénéficie de la coopération technique de l'*International Perspectives on Sexual and Reproductive Health* et de *Studies in Family Planning*. Le financencement principale pour la revue vient de la part du Consortium on Unsafe Abortion in Africa. L'objectif du Centre est d'améliorer la connaissance en matière de santé de la reproduction chez la femme au Nigeria et dans d'autres régions d'Afrique à travers la recherche en collaboration, le paidoyer, des ateliers et des séminaires à travers des séries de publication - *La Revue africaine de santé de la reproduction, Le Women's Health Forum* et des rapports des recherches de circonstance.

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COMMENTARY

Big Issues Deserve Bold Responses: Population and Climate Change in the Sahel

Malcolm Potts¹ and Alisha Graves²

Director, the OASIS Initiative¹, Associate Director, the OASIS Initiative

The challenge

Parts of Africa have the most rapid population growth in the world. Recent studies by climatologists suggest that, in coming decades, ecologically vulnerable areas of Africa, including the Sahel will be exposed to the harshest adverse effects of global warming. The threat hanging over parts of sub-Saharan Africa is extreme. Fortunately, there are evidence-based achievable policies which can greatly ameliorate what would otherwise be a slowly unfolding catastrophe of stunning magnitude. But to succeed such measures must be taken immediately and on a large scale.

In 1950 there were 30 million people in the Sahel, as broadly defined from Senegal on the Atlantic to northern Ethiopia and Eritrea on the Red Sea. Today there are 100 million. UN demographic projections 2050 are for 300 million. Last year, 18 million people in the West African Sahel were chronically hungry and only about one-third of children were enrolled in secondary school^{1, 2}. So examined on its own, this rapid population growth is cause for grave concern. It multiplies the number of individuals suffering from poverty and makes it more difficult for countries to develop³.

Now let's consider the effect of climate change in the Sahel. A rise of 3 to 5°C (7 to 10°F) is projected by 2050⁴. Today's extreme temperatures and weather events will become the norm. There may be an increase in precipitation but it is likely to come as flash floods or as rain that may evaporate even before it can reach the root roots of plants. On its own, climate change presents another serious problem in a drought-prone and vulnerable region.

Taken together, rapid population growth and climate change pose a serious threat to the livelihood of the majority of the one hundred million people now living in the Sahel region and about two hundred million more who will live there in a generation's time.

Traditionally, climatologists, physicians, those interested in food security or raising the status of women have worked in separate silos. And the Sahel region – with its landlocked countries and political instability – has been a low priority for major donors. The first meeting bringing together experts from Africa and from the United States to analyze population growth and the impact of climate change in the Sahel from the perspective of demography, family planning, agriculture, status of women and governance was put together as recently as September 2012. The University of California Berkeley and the African Institute for Development Policy hosted a meeting called Organizing to Advance Solutions in the Sahel (OASIS⁴) to share evidence and ideas for integrated approaches in the region.

Perspectives from Ethiopia

Global warming is a global problem demanding a global solution. Steps must be taken both to mitigate greenhouse gas emissions in the global North and to enable vulnerable populations in Africa adapt to a level of warming that is already inevitable.

In the first ten days of each year the average British citizen put out as many greenhouse emissions as the average person in a less developed country does in one year. The United States (US), with 4% of the global population

produces over 20% of the world's greenhouse emission⁵. Half the pregnancies in the US are unintended⁶. Averting unintended pregnancies benefits women and strengthens society. It also happens to be the most cost-effective way of reducing the carbon footprint of the US and other industrialized nations⁵.

Just as family planning is key to mitigation of climate change in high carbon producing countries, it is also a key strategy for adaptation. In low resource settings with a high unmet need for family planning, like Ethiopia, voluntary family planning can help families and countries as a whole adapt to inevitable climate changes in the near term. This edition of the African Journal of Reproductive Health includes an article by Rovin, Hardee, and Kidanu which examines Ethiopian perspectives on population, fertility, family planning and adaptation to climate. Participants in focus group discussions, including agriculturalists and pastoralists, described links between population pressures and climate change. They suggested family planning as an important adaptation strategy. Indeed, ninety percent of the National Adaptation Programmes of Action (NAPA) mention population as a contributing factor. Yet only two NAPAs identify family planning as a priority strategy and neither of those projects has been funded⁷. Given that the unmet need for family planning is 25% in Ethiopia and that the country is considering a longer-term climate change adaptation strategy, national prioritization of family planning programming is recommended.

The publication of this edition coincides with an international meeting on family planning taking place in Addis Ababa. Ethiopia has a special role to play in relation to rapid population growth and climate change. The total fertility rate is 4.8 and the population grows by 2.4% per year. However, in Addis Ababa, unlike any other African capital city, the TFR is now below replacement level fertility at 1.5⁸. This dramatic change is thanks in no small part to Ethiopian leadership on two important fronts. First, Ethiopia revised its abortion law to improve access to safe abortion services, including special provisions for minors, who make up more than 45% of those seeking

abortion⁹. Second, Ethiopia has been a world pioneer in task shifting, with the health extension worker (HEW) initiative. Together, these approaches are making family planning and safe abortion more accessible and saving lives. A study in Tigray, for example, shows that HEWs can safely administer injectable contraceptives as well as provide medication abortion^{10, 11}. People living in countries with high rates of unsafe abortion as well as those with clinical human resource shortages will benefit from Ethiopia's example.

The need for urgent, large scale action

Ethiopia is right in taking these bold steps because the situation in the Sahel is dire. And with the spread of terrorism in the region, the window of opportunity for taking action has already begun to close. We propose three "pillars" for action: make voluntary family planning universally available and counter misinformation about contraceptive methods; invest in the well-being of girls and young women; and promote appropriate technologies and practices to help subsistence farmers and pastoralists adapt to climate change. Doing any one of these three things alone will not suffice. We must tackle all three on a regional scale and with urgency. It will certainly be expensive – but no doubt a fraction of the cost of inaction. Somali pirates, for example, cost the global economy a stunning \$18 billion per year¹². The world cannot afford more failed states.

The London Summit on family planning in July 2012 represented a turning point in the willingness of governments and large philanthropic organizations to invest in family planning. The goal of the Summit was to meet 50% of the unmet need for family planning in developing countries. But we know from country-level data that when fertility falls, so does the desired family size. So we should aim to meet 100% of the current family planning need since unmet need will always prove a moving target – with demand for contraceptives growing as women have greater choices and realize they can be used safely.

Any response to the problems set out above must be on a large scale and immediate. Business as usual is not acceptable. Obstetricians,

physicians, development specialists, those committed to improving the status of women need to speak out in favor of universal, voluntary family planning. We have to help policymakers and other decision makers to understand the link between population and climate and remind them that demography is not destiny. We need to make the case that – while the cost of region-wide, integrated approaches are high – the cost of inaction is unacceptable. And we need to set much higher goals – because it is only when positive change happens on scale that societies can thrive.

References

1. Oxfam International. Food Crisis in the Sahel, 2013.
2. Population Reference Bureau. World Youth Data Sheet, 2013.
3. Guengant JP, Kamara Y. How Can We Capitalize on the Demographic Dividend? *A Savoir* Collection. 2012.
4. Potts M, Zulu E, Wehner M, Castillo F, Henderson C. Crisis in the Sahel: Possible Solutions and the Consequences of Inaction, 2013.
5. Potts M, Marsh L. The Population Factor: how does it relate to climate change? 2010.
6. Guttmacher Institute. Facts on Unintended Pregnancy in the United States. 2012.
7. Mutunga C, Hardee K. Population and reproductive health in National Adaptation Programmes of Action (NAPAs) for climate change in Africa. *Afr J Reprod Health*. 2010 Dec; 14(4 Spec no.):127-39.
8. Central Statistical Agency [Ethiopia] and ICF International. 2012. Ethiopia Demographic and Health Survey 2011. Addis Ababa, Ethiopia and Calverton, Maryland, USA: Central Statistical Agency and ICF International.
9. Ipas. Abortion in Ethiopia Fact Sheet.
10. Prata N, Gessesew A, Cartwright A, Fraser A. Provision of injectable contraceptives in Ethiopia through community-based reproductive health agents. *Bull World Health Organ*. 2011 August 1; 89(8): 556–564.
11. Prata N, Gessesew A, Campbell M, Potts M. “A new hope for women”: medical abortion in a low-resource setting in Ethiopia. *J Fam Plann Reprod Health Care*. 2011 Oct; 37(4):196-7.
12. The World Bank. Regional Vice-Presidency for Africa. The Pirates of Somalia: Ending the Threat, Rebuilding a Nation. Washington, DC. 2013.

COMMENTAIRE

Les Grandes questions méritent des réponses audacieuses: la population et le changement climatique au Sahel

Malcolm Potts¹ et Alisha Graves²

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Le défi

Certaines régions d'Afrique ont la croissance démographique la plus rapide du monde. Des études récentes menées par les climatologues indiquent que dans les prochaines décennies, les zones écologiquement vulnérables de l'Afrique, y compris le Sahel, seront exposées aux effets néfastes les plus sévères du réchauffement climatique. La menace qui pèse sur certaines régions de l'Afrique sub-saharienne est extrême. Heureusement, il existe des politiques réalistes fondées sur des preuves qui peuvent largement améliorer ce qui autrement constituerait une catastrophe qui s'évolue lentement d'une grandeur étonnante. Mais pour réussir, de telles mesures doivent être prises immédiatement et sur une grande échelle.

En 1950, il y avait 30 millions de personnes dans le Sahel, comme au sens large depuis le Sénégal sur l'Atlantique jusqu'au nord de l'Éthiopie et de l'Érythrée sur la Mer Rouge. Aujourd'hui, il y a 100 millions. Les prévisions démographiques de l'ONU pour l'année 2050 seront de 300 millions. L'année dernière, 18 millions de personnes dans le Sahel ouest-africain avaient chroniquement faim et seulement environ un tiers des enfants étaient inscrits dans l'enseignement secondaire *school*^{1,2}. Donc, considérée à elle seule, cette croissance rapide de la population est une cause de grave préoccupation. Il multiplie le nombre de personnes qui souffrent de la pauvreté et le rend plus difficile pour les pays de se développer³.

Or, considérons l'effet du changement climatique au Sahel. Une hausse de 3 à 5°C (de 7 à 10° F) est prévue dès l'an 2050⁴. Les températures extrêmes d'aujourd'hui et les événements météorologiques vont devenir la norme. Il peut y

avoir une augmentation des précipitations, mais cela pourrait probablement arriver comme les crues éclair ou la pluie qui peut s'évaporer avant même qu'elle ne puisse atteindre les racines des plantes. À lui seul, le changement climatique présente un autre problème grave dans une région vulnérable et enclin à la sécheresse.

Dans l'ensemble, la croissance rapide de la population et le changement climatique constituent une grave menace pour les moyens de subsistance de la majorité de la centaine de millions de personnes qui vivent actuellement dans la région du Sahel et environ deux cents millions de plus qui vont y vivre d'ici une génération.

Traditionnellement, les climatologues, les médecins, ceux qui s'intéressent à la sécurité alimentaire ou à l'amélioration de la situation des femmes ont travaillé dans des silos séparés. Et la région du Sahel - avec ses pays enclavés et l'instabilité politique - a été une faible priorité pour les principaux donateurs. La première réunion qui a rassemblé des experts de l'Afrique et des États-Unis pour analyser la croissance démographique et l'impact du changement climatique au Sahel du point de vue de la démographie, la planification familiale, l'agriculture, la situation des femmes et de la gouvernance, a été organisée récemment en septembre 2012. L'Université de Californie à Berkeley et l'Institut africain pour la politique de développement a organisé une réunion appelée *S'arranger* pour promouvoir des solutions dans le Sahel (OASIS⁴) pour partager des évidences et des idées en faveur des approches intégrées dans la région.

Perspectives de l'Éthiopie

Le réchauffement climatique est un problème mondial qui exige une solution mondiale. Il faut

prendre des mesures pour à la fois atténuer les effets des émissions de serre dans les pays du Nord et permettre aux populations vulnérables en Afrique de s'adapter à un niveau de réchauffement qui est déjà inévitable.

Au cours des dix premiers jours de chaque année, le citoyen britannique moyen éteint autant d'émissions à effet de serre que fait la personne moyenne dans un pays moins développé en un an. Les États-Unis (EU), avec 4% de la population mondiale produit plus de 20% d'émissions de serre du monde⁵. La moitié des grossesses aux États-Unis sont non voulues⁶. La prévention des grossesses non voulues favorise les femmes et renforce la société. Il est par hasard le moyen le plus rentable de réduire l'empreinte de carbone des États-Unis et des autres pays industrialisés⁵.

De la même manière que la planification familiale est essentielle à l'atténuation du changement climatique dans les pays à forte production de carbone, elle est également une stratégie essentielle pour l'adaptation. Dans les milieux à faibles ressources qui ont un besoin non satisfait de planification familiale, comme l'Éthiopie, la planification familiale volontaire peut aider les familles et les pays entièrement de s'adapter aux changements climatiques inévitables dans l'immédiat. Ce numéro de la *Revue Africaine de santé de la reproduction* comprend un article de Rovin, Hardee, et Kidanu qui étudie les perspectives éthiopiennes sur la population, la fécondité, la planification familiale et l'adaptation au changement climatique. Les participants aux discussions à groupe cible, y compris les agriculteurs et les éleveurs, ont décrit les liens entre les pressions de la population et le changement climatique. Ils ont proposé la planification familiale comme une stratégie d'adaptation importante. En effet, quatre-vingt dix pour cent des Programmes d'Adaptation National d'Action (PANA) mentionnent la population comme étant un facteur contributif. Pourtant, seuls deux PANA identifient la planification familiale comme une stratégie prioritaire et aucun de ces projets n'a été financé⁷. Étant donné que le besoin non satisfait en planification familiale est de 25% en Éthiopie et que le pays envisage une stratégie d'adaptation au changement climatique à plus long

terme, les priorités nationales des programmes de planification familiale sont préconisées.

La publication de ce numéro coïncide avec une réunion internationale sur la planification familiale qui aura lieu à Addis-Abeba. L'Éthiopie a un rôle particulier à jouer en ce qui concerne la croissance rapide de la population et le changement climatique. Le taux de fécondité est de 4,8 et la population s'accroît de 2,4% par an. Cependant, à Addis-Abeba, contrairement à toute autre capitale africaine, l'ISF est maintenant en dessous de fécondité de niveau de remplacement à 1,5⁸. Ce changement radical est, grâce en grande partie aux dirigeants éthiopiens, sur deux fronts importants. Tout d'abord, l'Éthiopie a révisé sa loi sur l'avortement afin d'améliorer l'accès aux services d'avortement sans risque, y compris des dispositions spéciales pour les mineurs, qui représentent plus de 45% de ceux qui recherchent l'avortement⁹. Deuxièmement, l'Éthiopie a été un pionnier mondial dans le transfert de tâches, avec les efforts faits par les vulgarisateurs de la santé (VS). Ensemble, ces approches rendent la planification familiale et l'avortement sans danger plus accessibles et le rend possible de sauver la vie. Une étude dans le Tigré, par exemple, montre que les VS peuvent administrer des contraceptifs injectables en toute sécurité ainsi que d'assurer l'avortement médicalisé^{10,11}. Les personnes domiciliées dans les pays à des taux élevés d'avortements non médicalisés ainsi que ceux des pénuries de ressources humaines cliniques profiteront de l'exemple de l'Éthiopie.

La nécessité d'une action urgente et de grande envergure

L'Éthiopie a raison de prendre ces mesures audacieuses parce que la situation dans le Sahel est désastreuse. Et avec la propagation du terrorisme dans la région, la fenêtre d'opportunité pour prendre des mesures a déjà commencé à se fermer. Nous proposons trois «piliers» d'action: rendre la planification familiale volontaire universellement disponible et lutter contre la désinformation sur les méthodes contraceptives; investir dans le bien-être des filles et des jeunes femmes, et promouvoir des technologies et des pratiques

appropriées pour aider les agriculteurs de subsistance et les éleveurs à s'adapter au changement climatique. Accomplir une seule de ces trois actions ne suffira pas. Nous devons nous préoccuper des trois à l'échelle régionale et avec urgence. Il sera certainement coûteux - mais sans doute une fraction du coût de l'inaction. Les pirates somaliens, par exemple, coûtent à l'économie mondiale un superbe 18 milliards de dollars par an¹². Le monde ne peut se permettre encore des Etats défaillants.

Le Sommet de Londres sur la planification familiale en juillet 2012 a marqué un tournant dans la volonté des gouvernements et de grandes organisations philanthropiques à investir dans la planification familiale. L'objectif du Sommet était de répondre à 50% des besoins non satisfaits de planification familiale dans les pays en développement. Mais nous savons, grâce à des données au niveau des pays, que lorsque la fécondité diminue, le nombre d'enfants désirés diminue aussi. Donc, nous devrions viser à atteindre 100% de besoin actuelle de la planification familiale puisque le besoin non satisfait sera toujours une cible en mouvement - vu la demande croissante pour les contraceptifs et que les femmes ont encore plus de choix et se rendent compte qu'ils peuvent être utilisés en toute sécurité.

Toute réponse aux problèmes énoncés ci-dessus doit être sur une grande échelle et immédiate. Le statu quo n'est pas acceptable. Les obstétriciens, les médecins, des spécialistes du développement, des personnes engagées à améliorer la situation des femmes doivent s'exprimer en faveur de la planification familiale volontaire universelle. Nous devons aider les décideurs politiques et autres décideurs à comprendre le lien entre la population et le climat et leur rappeler que la démographie n'est pas une fatalité. Nous devons faire valoir que

- alors que le coût des approches à l'échelle régionale, intégrés est élevé- le coût de l'inaction est inacceptable. Il faut que nous nous fixions des objectifs beaucoup plus élevés - parce que ce n'est que lorsque des changements positifs qui se passent à l'échelle que les sociétés peuvent prospérer.

Références

1. Oxfam International. Crise alimentaire au Sahel, 2013.
2. Bureau de la référence à la population. World Youth Data Sheet, 2013.
3. JP Guengant, Kamara Y. Comment peut-on capitaliser sur le dividende démographique? *A Savoir* Collection 2012.
4. Potts M, Zulu E, Wehner M, F Castillo, Henderson C. Crise au Sahel: les solutions possibles et les conséquences de l'inaction, 2013.
5. Potts M, Marsh L. Le facteur démographique: comment est-il lié aux changements climatiques? 2010.
6. Guttmacher Institute. Faits sur les grossesses non désirées aux États-Unis. 2012.
7. Mutunga C, Hardee K. Population et la santé de la reproduction dans les Programmes d'Action Nationaux d'Adaptation (PANA) aux changements climatiques en Africa. *Afr J Reprod Health*. 2010 Dec; 14 (4 numéro spec.): 127-39.
8. Central Statistical Agency [Ethiopie] et ICF International. 2012. Enquête Démographique et de Santé d'Ethiopie 2011. Addis-Abeba, Éthiopie et Calverton, Maryland, EU: Central Statistical Agency et ICF International.
9. Ipas. L'avortement en Ethiopie Feuille.
10. Prata N, Gessesew A, Cartwright A, Fraser A. Approvisionnement des contraceptifs injectables en Ethiopie par des agents communautaires de santé de la reproduction. *Bull of World Health Organ*. 2011 1 Août; 89 (8): 556-564.
11. Prata N, Gessesew A, M Campbell, M. Potts "Un nouvel espoir pour les femmes": l'avortement médicalisé dans un milieu à faibles ressources en Ethiopie. *J Fam Plann Reprod Health Care*. 2011 Oct; 37 (4) :196-7.
12. La Banque mondiale. Vice-présidence régionale pour l'Afrique. Les Pirates de la Somalie. Mettre fin à la menace, reconstruire une nation. Washington, DC. 2013.

RESEARCH ARTICLE

Linking Population, Fertility, and Family Planning with Adaptation to Climate Change: Perspectives from Ethiopia

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Abstract

Global climate change is felt disproportionately in the world's most economically disadvantaged countries. As adaptation to an evolving climate becomes increasingly salient on national and global scales, it is important to assess how people at the local-level are already coping with changes. Understanding local responses to climate change is essential for helping countries to construct strategies to bolster resilience to current and future effects. This qualitative research investigated responses to climate change in Ethiopia; specifically, how communities react to and cope with climate variation, which groups are most vulnerable, and the role of family planning in increasing resilience. Participants were highly aware of changing climate effects, impacts of rapid population growth, and the need for increased access to voluntary family planning. Identification of family planning as an important adaptation strategy supports the inclusion of rights-based voluntary family planning and reproductive health into local and national climate change adaptation plans. (*Afr J Reprod Health* 2013; 17[3]: 15-29).

Résumé

Le changement climatique mondial se fait sentir de façon disproportionnée dans les pays les plus économiquement défavorisés du monde. Comme l'adaptation à un climat en évolution devient de plus en plus saillante sur des échelles nationale et mondiale, il est important d'évaluer comment les gens au niveau local se débrouillent déjà avec des changements. Il est nécessaire de comprendre les réponses locales aux changements climatiques pour aider les pays à élaborer des stratégies pour renforcer la résilience face aux effets actuels et futurs. Cette recherche qualitative a mené une enquête sur les réponses au changement climatique en Ethiopie ; plus précisément, sur comment les communautés réagissent et font face aux variations climatiques, quels sont les groupes les plus vulnérables et quel est le rôle de la planification familiale dans l'augmentation de la résilience. Les participants étaient très conscients des effets du changement climatique, les impacts de la croissance rapide de la population et de la nécessité d'avoir encore d'accès à la planification familiale volontaire. L'identification de la planification familiale comme une stratégie d'adaptation importante soutient l'inclusion de la planification familiale volontaire et la santé de reproduction fondées sur les droits dans les plans d'adaptation aux changements climatiques locaux et nationaux. (*Afr J Reprod Health* 2013; 17[3]: 15-29).

Keywords: Ethiopia, climate change, family planning, reproductive health, resilience and adaptation

Introduction

The problems are getting worse. The temperature, shortage of food and rainfall situation is worsening (Rural male, age 38 with three children).

The unfolding effects of global climate change are felt disproportionately in the world's most economically disadvantaged countries, emphasizing the need to focus attention on adaptation to climate

change^{1,2}. Many of these countries also face rapid population growth-among the 49 Least Developed Countries and Small Island States eligible for funding through National Adaptation Programmes of Action (NAPAs), more than half (27) are on track to double their populations by 2050 based on the United Nations Population Division's medium variant population projection. In these countries, 84% of the NAPAs noted that a rapid increase in population and population pressure will inevitably

exacerbate the effects of climate changes that have already started³. However, the international research community has predominantly emphasized the influence of population with regards to carbon emission reductions, rather than as a component of adaptation strategies^{4,5}.

Moreover, the topic of population in relation to climate change elicits strong reaction at the international level, usually linked with the fear of population control. For policymakers the topic has been described informally as “toxic⁶.” Yet should the topic be one that policymakers refuse to touch? What do people who live in countries that are both facing changes in climate as well as rapid population growth, and other demographic change, such as rapid urbanization, migration, or aging think? Understanding local-level views on climate change and responses is essential for helping international policymakers and national leaders construct new strategies to bolster resilience and ultimately prepare people and communities to adapt to more severe changes in climate.

However, as noted, scant research exists which effectively links population growth and demographic factors with adaptation and resilience to climate change issues, although McLeman has recently proposed a typology of the interactions between population change and vulnerability to climate change⁷. Lack of attention to population and fertility in studies on adaptation has meant that the potential for strategies to address demographic factors to help people build resilience and adapt to climate change has been missed. Furthermore, the role of women in adaptation strategies has also been underrepresented in existing literature, despite the evidence that the women, especially socioeconomically disadvantaged women, are disproportionately affected by climate change⁸.

In this context, Population Action International (PAI) and Miz-Hasab Research Center (MHRC), in collaboration with the Joint Global Change Research Institute (JGCRI), conducted a study in Ethiopia, a country hard hit by the effects of climate change, to investigate the link people make between climate change and population factors. This paper describes perceptions of Ethiopians in two regions regarding: 1) understanding of and experience with climate changes, 2) factors contributing to ability to adapt

to future changes, and 3) the relationship between climate change, population, and fertility and the potential role of family planning in building resilience.

Impacts of Climate Change in Ethiopia

Ethiopia is extremely vulnerable to climate change impacts due to a constellation of social, economic, and environmental factors. In particular, high levels of poverty, rapid population growth, a high level of reliance on rain-fed agriculture, high levels of environmental degradation, chronic food insecurity, and frequent natural drought cycles are the predominant factors increasing Ethiopia's climate change vulnerability⁹. Average annual temperatures nationwide are expected to rise 3.1° C by 2060, and 5.1° C by 2090. Compounding the negative effects of temperature increases alone, precipitation is also projected to decrease from an annual average of 2.04 mm/day (1961-1990) to 1.97 mm/day (2070-2099), for a cumulative decline in rainfall by 25.5 mm/year¹⁰. Farmers will be overwhelmingly affected by these changes due to a widespread reliance on rain-fed agriculture throughout the country—providing a livelihood for 85% of the population¹¹.

Drought, already endemic to Ethiopia, has increased in the past several decades, along with pervasive food insecurity and malnutrition¹²⁻¹³. Ethiopia is already heavily dependent on food aid, and this dependency is expected to grow with imminent climatic changes¹³. Annually, Ethiopia loses an estimated 1.5 billion tons of topsoil, and 82% of the country's land area is experiencing soil erosion¹²⁻¹⁵. Flooding has also increased in frequency, predominantly due to deforestation and soil degradation; by 2011 only around one percent of Ethiopia's land area was forested^{16,17}. Population pressure has increased demand for agricultural and grazing land, and wood for fuel and construction purposes. Furthermore, over-cultivation and over-grazing increase soil erosion and strip soils of nutrients, decreasing arable land and accelerating deforestation rates¹⁵.

Population, Fertility, and Family Planning in Ethiopia

In 2010 Ethiopia's population was estimated at 83 million, growing at a rate of 2% annually¹⁸. The

country's population is expected to more than double by 2050, even with the ambitious assumption that fertility rates will decline to nearly replacement level (1.87% by 2050 based on the United Nations Population Division's medium variant population projection)¹⁸. Population density is also projected to almost double from 72 people per square kilometer in 2005 to 131 per square kilometer by 2050 using these same population estimates. Further, Ethiopia has a very young age structure with 72% of the population under age 30^{19,20}. Currently the country's population is predominantly rural-dwelling (83%), although with urban areas growing at a rate of 3.6% annually, over a quarter of the population is projected to be urban-dwelling (36%) by 2050²⁰. These demographic characteristics reveal pre-existing vulnerability to climate changes as population continues to grow, rural land is degraded, and individuals migrate to urban areas.

Underlying Ethiopia's growing population is a high fertility rate. In 2011, a national survey showed that women typically have 4.8 children in their lifetimes, a small decline from 5.4 children per woman in 2005, and a larger decline from 6.4 children per woman in 1990²¹. However, these national estimates mask huge regional and socioeconomic variations. Women in rural areas have higher fertility than their urban counterparts (5.5 vs. 2.6), and women with no education have a much higher total fertility rate than women with secondary education or higher (5.8 vs. 1.9). Fertility generally begins early and peaks among women aged 25-29 years; by the age of 18, 34% of women have given birth. Finally, fertility is strongly associated with wealth: women in the lowest income quintile have, on average, 6.6 children, while women in the highest quintile have an average of 2.8 children²¹.

While awareness of family planning is high, only 29% of married women are currently using modern methods of contraception. Use of family planning is higher in urban areas, among women with higher levels of education, and among women in higher wealth quintiles. Most importantly, an estimated 25% of currently married women have an unmet need for family planning; that is, they want to postpone

childbearing for two or more years or stop entirely, but they are not currently using contraception²¹.

Methods

Defining Vulnerability and Resilience

The Intergovernmental Panel on Climate Change (IPCC) has defined both vulnerability and resilience. In terms of human societies, vulnerability can be analyzed by examining: 1) how dependent a society is on climate for its well-being, 2) how much damage climate change will inflict on people's health and well-being, and 3) what coping and adaptation resources exist within the society. The inverse of a population's vulnerability is its resilience, defined as, "the ability of a social or ecological system to absorb disturbances while retaining the same basic structure and ways of functioning, the capacity for self-organisation, and the capacity to adapt to stress and change²²." Adaptive capacity, "the ability of a system to adjust to climate change (including climate variability and extremes) to moderate potential damages, to take advantage of opportunities, or to cope with the consequences" is a critical element of resilience²².

Although adaptation, resilience and adaptive capacity have been defined by the IPCC, the ways individuals and groups affected by climate change (especially in developing countries) conceptualize and understand these issues remains unclear. Existing studies focus on individuals' ability to recognize climatic changes (especially farmers' recognition of environmental changes), and subsequently the specific coping strategies used to mitigate these effects (for example, changes in agricultural practices). The interaction between social, economic, and environmental issues in different communities has also been addressed as it relates to both exacerbating and perpetuating vulnerability to climate change²³. However, these studies fail to capture the subjective experiences of those most vulnerable to climatic events, including their perceived adaptation needs. Malone notes the importance of eliciting people's perceptions of climate change contending that, "an important dimension of assessing resilience is identifying the

risks people face, especially those they self-report, resilience²⁴.” Moreover programs that fulfill these felt needs will have a higher likelihood of being successful than those imposed on people and communities.

Country Selection

Ethiopia was selected based on the following criteria: 1) documented changes in climate, 2) rapid population growth rate, 3) ranking as one of the world’s least developed countries, 4) Vulnerability-Resilience Indicators Model (VRIM) index indicating vulnerability to climate change, and 5) other global measures which indicate that Ethiopian citizens could be particularly vulnerable to the effects of climate change²⁵⁻²⁷. These additional measures include the United Nations Development Programme’s (UNDP) Human Development Index, which ranks Ethiopia 169 out of 177 countries, and the UNDP’s measure of gender inequality, which ranks Ethiopia 72 out of 93 countries on the degree to which women take part in the country’s economic and political arenas²⁸.

Research Design

This research used a case study approach with a qualitative cross-sectional design to capture the lived experiences of people currently experiencing the effects of climate change. Various data sources, including scientific literature, policy documents, and oral narratives, were utilized in order to represent most accurately the experiences of climate change in Ethiopia. The paper includes quantitative data on climate change in Ethiopia to the extent possible. Given the small size of the study areas, it was not possible to include local-level data on climate and environmental changes.

Qualitative data collection was accomplished through the use of semi-structured in-depth interviews (IDIs) and focus group discussions (FGDs) based on a shorter semi-structured interview guide. Both IDIs and FGDs centered on five vulnerability and resilience to climate change themes: 1) experiences of weather-related changes, 2) availability of social and economic resources in the community, 3) environment, 4) health, and 5) resilience to climate and environmental changes.

and their strategies and desired strategies to build In addition to information focused on adaptation and resilience to climate change, socioeconomic and demographic information was collected from each participant in this study. Participants were asked if they had heard of “climate change,” and they were also asked about experience with “weather-related events” and “environmental changes.” The study and questions did not imply that all weather-related events and environmental changes were necessarily caused by climate-change. But rather, the study sought to elicit participants’ views on the changes in their environments and weather patterns, if any, that they had experienced. Questionnaires were first developed in English by PAI, JGCRI, and MHRC, and then translated into Amharic, pre-tested, adapted, and finalized for use.

The study was conducted in two peri-urban sites, one rural predominantly pastoralist site and one rural predominantly agricultural site. A purposive sampling strategy was employed and potential study participants were recruited based on their location of current residence, knowledge of community life, and past experience with climate changes. Participants included national and local-level policymakers, government representatives, community leaders, civil society groups, and men and women living in communities directly threatened by climate change effects. In all, the study included 12 FGDs conducted separately with 48 men and 48 women, 24 IDIs with community members and leaders, and 14 IDIs with policymakers, government representatives, and other key leaders (Table 1).

Site Selection and Fieldwork

Fieldwork was carried out in the Oromia and Southern Nations, Nationalities and People’s (SNNP) regions of Ethiopia between December 2008 and May 2009. The research sites (peri-urban and rural) (Maps 1 & 2) were selected in consultation with regional administrations. In Oromia, selection criteria required that: 1) the area had experienced recurrent adverse climatic conditions, and 2) that the rural livelihood was predominantly pastoral. In SNNP, the selection

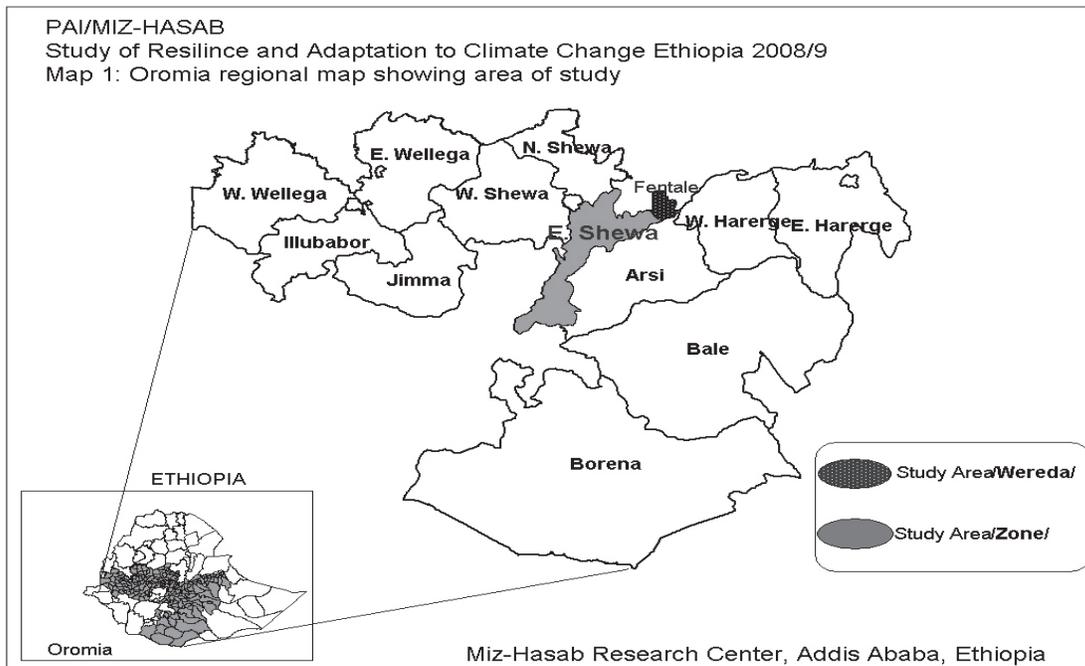
Table 1: Number and Type of Interview, by Location, Ethiopia, 2008-2009

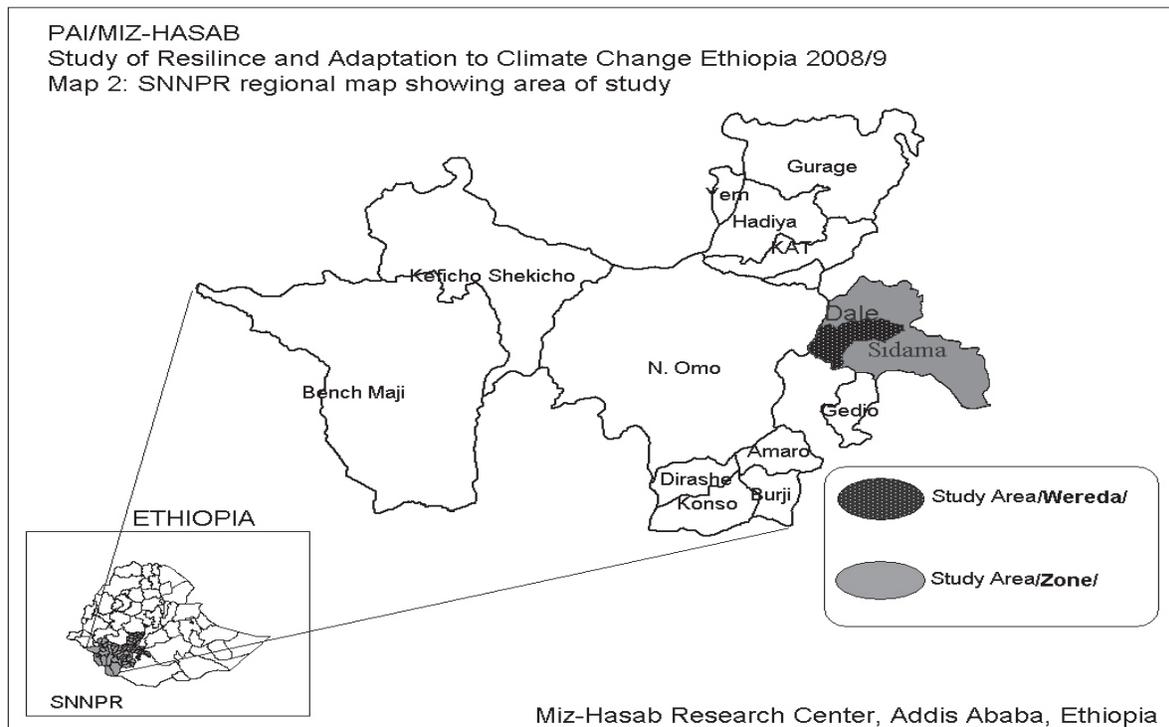
Region, zone and woreda	Location	Number of Interviews				
		FGDs – Community members		IDIs – Community members, leaders		IDIs –Policymakers, government representatives and other leaders
		Male	Female	Members	Leaders	
Oromia/Eastern Shewa Zone/Fentale Woreda	Peri-urban	1	1	3	1	4
	Rural	2	2	5	3	
SNNP/ Sidama Zone/Loko Abaya Woreda	Peri-urban	1	1	3	5	4
	Rural	2	2	5	3	
National						6
Total		6 groups, 48 participants	6 groups, 48 participants	16	12	14

criteria were similar in terms of climatic conditions, but required that the rural livelihood was predominantly agricultural. The livelihood criteria ensured representation of Ethiopia’s two major rural livelihoods, and provided researchers with the ability to assess qualitative differences in experiences with and adaptation to changes in

climate between pastoral and agricultural populations. Additionally, in both Oromia and SNNP, peri-urban sites were selected based on their associations with the selected rural sites (for example, as the sites of local government or market towns).

Map 1.



Map 2.

Within Oromia, the town and the peasant associations where research was conducted were located in the central region of Fentale Woreda of Eastern Shewa Zone, which is predominately rural, with a hot and dry climate and very little rainfall. Most of the rural residents are pastoral. However, some agricultural practices have also recently been adopted. The area has been affected by both a shortage of regular rain, resulting in recurrent droughts, and also unexpected intermittent heavy rainfall, resulting in repeated over-flooding of the Awash River and the Beseka Lake, the area's two main water sources. Beseka Lake, in particular, is salty and has also been growing larger over time. Lake overflow destroys farmlands and disrupts crop production. This phenomenon has subsequently contributed to a rise in food prices in the area. The Awash River has recently been used for irrigation purposes, with the support of the government to help alleviate some of this decline in crop production. Tornadoes and endemic malaria also affect both rural and urban residents of Fentale Woreda. The peri-urban site selected within the Fentale Woreda was Metehara.

Residents of this town are predominantly small traders and government employees.

Overall, the use of modern methods of contraception is low in Oromia with only 26 % of currently married women using a modern method of contraception. Economic and religious reasons are the most commonly cited deterrent of family planning practices throughout the region. As a result of low use rates, household sizes in Oromia are generally large, with an average lifetime number of 5.6 children²¹.

Within SNNP, the town and peasant associations selected for this research study were located in Loka Abaya Woreda in the eastern portion of the SNNP region in the Sidama Zone. The area is generally classified as lowland and has been affected by recurrent drought and excessive heat. Deforestation is a prominent environmental issue—the large-scale loss of trees has resulted in farmland erosion and subsequent bareness. Additionally, the area faces severe water shortages that force the population to travel long distances in order to access water. Malaria is also endemic and considered one of the major health hazards of the

area. The peri-urban site selected was Hantete Town, which has a population of about 2,000. Peri-urban residents of the Woreda are mainly government employees and small-scale traders, while most rural households practice subsistence farming and rely heavily on “ensent” (nutritious bread made of the roots of *Ensete superbum*, or “false banana” trees) for food. Peri-urban residents also grow some crops including pepper and small numbers of coffee trees, both for consumption and to generate income. Household sizes in this region are somewhat smaller than in Oromia, with an average of 4.9 children per woman and only 26% of currently married women are using a modern method of contraception throughout the SNNP region²¹.

Study Limitations

Qualitative research is a powerful way to reflect the real voices of study participants and also allows for a unique in-depth exploration of various topics in ways that quantitative research is unable to capture. However, the trade-off of using a qualitative method is a lack of generalizability of research findings. This study includes findings from peri-urban and rural areas; therefore, the views of Ethiopians from large urban areas are not included, thus rural voices are overrepresented in this research. Furthermore, as participants were selected purposively rather than randomly, participant characteristics are not representative of the country as a whole. In general, the study participants tended to be older on average than the general Ethiopian population. Furthermore, given that the peri-urban research sites were very close to the rural sites, on some characteristics, like education, the peri-urban and rural participants were more similar than if the study had included large urban areas, such as Addis Ababa. Background characteristics were also not collected for government representatives and community leaders.

Another limitation of this study is in the accuracy of participant recollections of changes in climate. Specifically, participants were required to differentiate between the effects of changes in climate versus changes due to other factors, such as natural environmental variations, or human

caused environmental degradation unrelated to climate change. *This distinction is not always clearly distinguished in people’s minds*²⁹⁻³³.

For example, the expansion of Beseka Lake in Oromia, which participants attributed to climate change, is more likely due to other environmental and anthropogenic causes³⁴. Despite these limitations, this study makes an important contribution to the existing literature and to the policy dialogue on adaptation to climate change. It is among the first to highlight the links that people themselves make between their experience dealing with climate change and population, family size, and family planning.

Participant Characteristics

Table 2 shows the background characteristics of focus group participants. FGDs were composed of half men and half women. On average, men were older than women (mean of 38 years compared to 29 years of age). Around three-quarters of the participants were currently married. Most participants (67% in rural sites and 59 percent in peri-urban sites) in both regions had lived in their communities for more than 10 years. Further, in both regions, almost all participants reported living in households with an average of more than five people. Average household size was slightly higher in peri-urban compared to rural sites in both regions. However, participants in both peri-urban and rural areas reported the same average number of children, 3.3. Participants from peri-urban and rural areas had similar educational backgrounds, with 13% of peri-urban and rural participants indicating they had not received any formal education. The four most frequently mentioned occupations amongst FGD participants were farmer (29%), pastoralist (15%), government worker (14%), and merchant (8%) (not shown in Table 2). On average, participants from rural areas said that their households spent about 60 minutes a day collecting water, which is three times longer than the 23 minutes noted by peri-urban participants. The difference was particularly dramatic in Oromia, where virtually all peri-urban residents have water piped into their houses or compounds, compared to rural residents, who have to travel for water.

Table 2: Background Characteristics of FGD Participants, by Region, Residence and Sex, 2008

Characteristics	Oromia			SNNP			Residence		Sex	
	Total (N=48)	Rural (N=32)	Peri-urban (N=16)	Total (N=48)	Rural (N=32)	Peri-urban (N=16)	Rural (N=64)	Peri-urban (N=32)	Male (N=48)	Female (N=48)
Average Age	37.4	30.3	51.4	29.0	30.6	25.9	30.5	38.7	37.9	28.5
Average Number of Children	3.2	3.1	3.2	3.5	3.5	3.4	3.3	3.3	4.1	2.5
Married (percent)	79%	78%	81%	73%	72%	75%	75%	78%	83%	69%
Years in current community										
Less than one year	1	1					1			1
1-5 years	5	5		14	8	6	13	6	4	15
6-10 years	10	4	6	4	3	1	7	7	3	11
More than 10 years	32	22	10	30	21	9	43	19	41	21
Number of People in Household	5.2	5.0	5.6	5.7	5.5	5.9	5.3	5.8	6.3	4.5
Time spent by household collecting water (minutes)	29	43	2	66	76	45	60	23	46	49
Highest level of schooling completed (percent)										
None	23%	22%	25%	2%	3%		13%	13%	15%	10%
Some primary school	38%	44%	25%	21%	22%	19%	33%	22%	25%	33%
Completed primary school	2%		6%	10%	9%	13%	5%	9%	8%	4%
Some secondary school	10%	9%	13%	35%	34%	38%	22%	25%	25%	21%
Completed secondary school	13%	6%	25%	19%	22%	13%	14%	19%	19%	13%
Technical/Vocational Certificate	13%	19%		13%	9%	19%	14%	9%	6%	19%
University/College Diploma	2%		6%					3%	2%	

Because the number of community members who participated in IDIs was small (16), their characteristics are not included. However, in comparison to the FGD participants listed in Table 2, IDI participants tended to be slightly older and to have larger households (8 persons per household compared to 5.5 persons per household). Other study participants, whose background characteristics were not collected, included government officials and key community and national leaders. These participants ranged from a vice mayor to the heads and staff of departments responsible for: environmental protection, agricultural and rural development, disaster prevention and food security, water resources, youth and sports, security, public health, population, health and environment, and biodiversity conservation.

Findings

Knowledge and Experience of Climate Change

Almost all participants from both regions, as well as local and national-level participants, indicated having heard about climate change and cited local media (radio, television, and newspapers), as well as school and government institutions as their main sources of information. Participants' descriptions of climate change ranged from personal observations of environmental changes to more scientific information received from media sources. Moreover, participants attributed recent environmental changes in their communities—in particular, deforestation, lack of rainfall, and increasing temperatures—to climate change. Destruction of forests and soil erosion were frequently described as exacerbating climate changes in Ethiopia. *“One of the main reasons for this climate change is there is no forest in this area and the temperature is increasing because of this,”* according to a 40 year-old man from peri-urban SNNP who has three children and works as a merchant. A government representative from Addis Ababa added, *“I think one indicator [of climate change] is the temperature increment, which is getting worse day to day. The other thing... is the absence of rain in some seasons.”*

Participants also noted that lack of rainfall and increasingly hot temperatures have resulted in the

degradation of farm and grazing lands, deforestation due to an increasing need to cut trees for charcoal production to substitute for lost income from agriculture, increased food prices, food shortages, and in the Oromia region, flooding as a result of overflow from Beseka Lake. Additionally, access to water was identified as a particularly important issue, even in the peri-urban areas where access to piped water was far more common. A combination of decreased rainfall and increasing temperatures—events participants identified as weather-related events associated with climate change—has led to the desiccation of wells and small lakes, which are crucial sources of water for many people. As a result of this severe shortage, people are forced to travel long distances to acquire water. A 25 year-old woman living in peri-urban SNNP with three children explained, *“In earlier times, our Woreda was very green, and there was no famine... but now everything has changed. We cannot get harvest after planting, and rain doesn't come on time as a result of these changes.”*

Groups Most Vulnerable to Climate Change

Participants generally identified women and children as the groups most vulnerable to weather-related events. Participants attributed women's increased vulnerability to their responsibility for the majority of household activities and childcare, a cultural norm throughout the area. In particular, women's responsibility to supply the family with water was identified as an activity increasingly affected by changes in climate because it often requires women and girls to travel long distances, increasing their risk of physical harm, in addition to increased energy expenditure. For example, a male teacher living in peri-urban Oromia who has three children, said, *“A woman after marriage will have children. At this time, since the climate is changing and the temperature is hot, she will be affected because she holds all the responsibility [for] the family.”*

For children, community members describe the impacts of weather-related difficulties—drought and famine—as particularly severe and with long-term implications, especially regarding education. During times of weather-related difficulties,

families may withdraw their children from school, either due to lack of finances or in order to migrate in search of better living conditions or employment. Children are also required to aid in household activities or to help support their families by working, and in most cases, find it difficult to pursue an education. Participants from both research sites and living in both peri-urban and rural settings emphasize that during times of difficulty, the nutritional needs of children are not met, resulting in malnutrition, fatigue, inability to perform in school, increased incidence of disease, and sometimes even death. According to a 46 year-old man living in rural Oromia who has 13 children and works as a pastoralist, *“During difficult times, children, unlike other times, are highly affected by food shortages...In addition, during difficult times, children are forced to keep cattle when the family moves, and they drop out of school.”*

Changes in Livelihoods Related to Climate Change

Climate changes have affected participants differently depending on their livelihoods (pastoral or agriculture) and their places of residence (rural or peri-urban). However, both pastoralists and farmers reported increased frequency of weather-related events in recent years and having to change aspects of their livelihoods in the face of changes in the environment. For example, some farmers described having to abandon their farms to make charcoal from local trees as an alternative livelihood strategy due to lower agricultural production, and both agriculturalists and pastoralists reported having lost cattle to drought. One woman, age 23, living in rural Oromia with three children explained, *“The majority of farmers are displaced from their land and are working on processing charcoal, and some are migrating to cities. As there is no reasonable seasonable rainfall, it’s impossible to cultivate land. Cattle are dying and forests are being destroyed.”* Additionally, a 35 year-old man farmer from SNNP with six children linked climate change with poor crop yields and subsequent economic hardship. He suggested that, *“In the past, when we had enough rainfall, we used to get a good harvest*

from our farm. But now we plant crops but there are times [when] they won’t grow. We buy fertilizers [at] high prices...but at times we come out with nothing.”

Participants noted other issues related with climate change. Several pastoralist participants mentioned an increased potential for conflict with other community members as they shifted their livelihoods. A 39 year-old man living in rural Oromia with eight children described the hardships specific to the frequent migrations inherent in a pastoralist lifestyle, and the risk of coming into conflict with other groups while migrating, asserting, *“We pastoralist people...face a lot of problems during migration...all this is happening due to the climate change.”* Peri-urban residents, in particular, identified high food prices and increasing costs of living as the most serious problems facing their communities. An unemployed 20 year-old woman with two children living in peri-urban SNNP reflected that, *“In earlier times, fuel wood was easily accessible, but now those people who are not able to buy kerosene are traveling long distances to get fuel wood.”*

Linking Climate Change to Population and Family Size

Limiting the number of children will help us to cope with the change in climate (Rural woman, age 25 with three children, SNNP).

Participants-most notably from SNNP where pressure on agricultural land is growing stronger-frequently, and without prompting, mentioned population growth as a contributing factor in, or as a main cause of, observed environmental changes. For participants from SNNP, population growth linked with a decline in forests was perceived as related to changes in climate. For example, a rural man farmer with six children from SNNP stated, *“I think the major problem is population increase, not diminishing forest reserves, because it is population increase that causes the loss of forests.”*

Additionally, participants noted that the number of children in a household is an important determinant of that household’s ability to support itself in the face of current economic and

environmental conditions. Many individuals asserted that historically throughout Ethiopia the prevalent attitude towards the number of children per family has been to have as many children as possible and let God's will provide the necessary resources to raise them. Women are also frequently granted prestige within their families and communities based upon the number of children they have. Further, children may also play an economic role in the family by providing labor for pastoral or agricultural practices and thus have traditionally been considered an asset rather than a burden.

However, participants demonstrated changing attitudes towards large families. Most significantly, the identification by many participants that families with fewer children are better positioned to deal with current challenges, including difficulties related to the environment. For example, A 38 year-old man government worker with three children living in rural Oromia explained that, *"In earlier times, people said that children are gifts from God and God knows how they will grow. But now they are saying that we can have children and we need to save money also."* Another male government worker, age 36, residing in peri-urban SNNP with five children added, *"Yes, it is known that [having an] unlimited number of children is a problem for the family...For the household with few children, it is easy to feed all the children balanced food and to give them a good education."*

However, some barriers still exist to the implementation of family planning in Ethiopia-cultural pressures to bear more children, disagreement on whether religion expressly prohibits family planning, and a lack of contraceptive knowledge. For example, a 50 year-old female pastoralist with five children from Oromia explained that, *"The community itself is using the tablet [oral contraception] or is having a child after enough [a gap of enough] years. The community is also accepting the education and using the family planning,"* although she herself believed family planning was against her religious tenets. Participants also noted a discrepancy between the number of children a household has typically had in the past and the number of children most households are now able to sustain.

This sentiment is evidenced by the testimony of a woman living in peri-urban SNNP, who at the age 22 already had three children, and who stated that, *"Everyone needs to have children based on the resources [they have], and I feel two to four children are enough."*

Increasing Resilience

Study participants identified various strategies that would help them become more resilient to both current and future climate changes. In particular, irrigation, loans for microfinance projects, migration to less affected areas, replanting trees-and access to family planning-were repeatedly mentioned as adaptation strategies that would increase resilience. For farmers, soil and water conservation achieved through strategies such as terrace farming were suggested by participants as solutions for loss of agricultural productivity due to climate change, soil degradation, and deforestation. Varying the types of crops planted to include more drought-resistant species and increasing the planting of vegetables with high marketplace value were also identified as possible strategies for the current economic and climate issues. A prominent theme throughout both FGDs and IDIs was a general sentiment that the government is responsible for helping communities. For example, a male farmer age 30 from SNNP with six children said, *"When we have no rain and a drought is [expected], we will be forced to look for government aid."* Similarly, a 29 year-old man pastoralist from rural Oromia with two children added, *"There are a lot of things that are done by the government. The government is working to change the lifestyle of the people from pastoralist to agricultural farming and the government is also seriously working to improve the livelihood of the people from agriculture."*

Participants frequently mentioned family planning as a component of adaptation strategies that would also boost resilience. For example a 60 year-old man pastoralist from rural Oromia who has ten children stated that, *"The government has to give education for the community and give training about climate change, family planning, and loan and saving activities."* A rural woman from Oromia, age 37 with five children and