POPULATION DYNAMICS AND POLICIES IN THE CONTEXT OF GLOBAL CLIMATE CHANGE

George Martine UNFPA/IIED Expert Group Meeting London, June 24-25, 2009

Resurgent Interest in Population Due to GCC

- Focus here on mitigation and population policies
- Population dynamics clearly important but their implications not straightforward
- Two divergent approaches:
 - Population is "THE" crucial environmental problem VERSUS
 - IPCC and US Report "low key": basically each additional person is an undifferentiated unit contributing to one more unit of GHG emission
- Useful to examine separately: growth, distribution, composition

Population Size and Growth

- Northern Perspective: "Support of a global plan of voluntary birth control and family planning is a simple solution to world overpopulation and virtually all the world's environmental problems"
- Importance of population growth in aggravation of GCC threat is irrefutable; earlier "stabilization" undoubtedly better than later
- It's important to provide all women and couples immediately with SRH, the sooner the better – for individual and global well-being
- BUT....NO QUICK FIXES: massive family planning campaigns in developing countries, where fertility is high, provide only partial and longer-term answer to GCC

Time Dimension of Effects of FP on emissions

Fertility declines are crucial over longer-term, particularly if "developing" countries achieve it

But, effects of FP over short-term are reduced....

Population's contribution to global environmental problems depend on who manages to achieve or maintain high levels of economic growth

"Population" effects on emissions are determined by consumption patterns of different countries and social groups





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Growth of Population and GNPP, Developed and Developing Countries, 1950-





Source: Marland, G., T.A. Boden, and R. J. Andres, Global, Regional, and National

Short term effects of FP on emissions are reduced

- Actual impact of future fertility declines on mitigation is not proportional to the number of people who are "not born"
- High fertility groups have lowest emission impact; fertility reduction would have more effect if occurred in high consumption countries
- But, unpredictable: now witnessing fertility rebounds in developed countries
- The ability of family planning programs *per se* to reduce fertility is overblown. Particularly difficult where majority is poor and rural
- Most population growth today is inertial. China will grow 320 million between time it reached replacement fertility (1990) and time it stops growing (2035)
- Family planning has no retroactive impacts: Even if humankind failed to produce a single baby during the next generation, its quality of life on Planet Earth would still be endangered by climate change
- Fertility decline is preceded, and followed, by social development and therefore increases in consumption; these will likely counter reduced number of consumers

In short, on growth and size...

- There is no demographic reprieve from the need to face the more critical environmental challenges posed by our civilization's model of "development"
- Population control without development is unlikely to work from a demographic standpoint
- Without drastic changes in production and consumption patterns, it would not work from an environmental standpoint

SPATIAL DISTRIBUTION

- Population growth and GCC issues are basically urban issues!
- Cities are THE critical locus for GCC but still viewed mostly in traditional negative light
- Urbanization blamed for environmental problems because it is conflated with other processes (e.g. - economic growth, higher incomes and consumption)
- But concentration actually necessary for reduction of environmental problems
- Critical that almost all growth will occur in developing countries

Percentage of population residing in urban areas by major regions, 1950-2050







Two main grievances concerning urban areas in GCC: emissions and land use change

Emissions and cities: Dodman and Satterthwaite have refocused this criticism

Land use change due to urbanization: frequently cited as first order climate forcing factor

But evidence still not robust.

UHI confirmed but not regional or global effects

Most studies can't separate urban from other land uses

Urban land use effects are small because of small extents

Thus, critical to see how much urban land there is, and how much it will expand by region in the future

Projection of Urban Land, 2010-2050, By Region, According to Two Assumptions

Region	Urban Land in 2010 (Sq km)	Urban Land as % of Total in 2010	Urban Pop in 2010 (in ms)	Pop. growth 2010- 2050 (in ms)	Urban Land in 2050*	% of Total in 2050*	Urban Land in 2050#	% of Total in 2050#
Northern Africa	81.378	0,99%	107	116	169.321	2,06%	181.132	2,20
S-Saharan Africa	138.287	0,65%	305	706	458.429	2,15%	490.406	2,31
East Asia	401.045	3,53%	757	422	624.395	5,50%	667.949	5,88
S. Central Asia	349.993	3,35%	572	879	887.654	8,50%	949.571	9,09
S. Eastern Asia	96.874	2,17%	287	275	189.834	4,25%	203.076	4,55
West Asia	144.247	3,55%	154	141	276.442	6,80%	295.725	7,28
Eastern Europe	299.382	1,64%	199	(22)	266.680	1,46%	290.933	1,59
Europe (Remain.)	533.250	13.0%	331	48	610.845	14.9%	666.399	16,21
LAC	526.991	2,59%	471	211	763.404	3,75%	816.654	4,01
N. America	885.876	4,68%	286	115	1.242.193	6,56%	1.355.166	7,16
Oceania	49.211	0,58%	25	12	73.146	0,86%	79.798	0,94
WORLD	3.506.534	2,70%	3.495	2.903	5.562.342	4,28%	5.996.810	4,62%

In sum, on urbanization...

- Focus on impact of urban land use overstated, but decreasing density IS a concern for the future
- Orientation of future urban growth is important for mitigation and crucial for vulnerability
- Particular attention needs to be given to land and housing needs of the poor, who make up some 40% of urban population and a larger proportion of future growth
- Policy Implications:
 - densely-populated urban areas can become an important ally in efforts to mitigate GCC
 - Compactness and economies of scale of cities can reduce per capita costs and energy demand, while minimizing pressures on surrounding land and natural resources.
 - Urbanization *per se* is powerful factor in fertility decline

Population Composition

- Still under-rated factor in emission scenarios (Jiang and Hardee)
- Different component groups have differentiated consumption needs and preferences
- Understudied: gender dimensions in mitigation; differential impacts of ageing and household composition in developing and industrialized countries
- Key issue growth of smaller households in developing countries as result of fertility decline: consume more, on a per capita basis, than large ones because of greater residential land use, larger dwellings per capita, greater consumption of appliances and automobiles and thus of energy

The Surging DINKs

- Rapid growth of DINKS in developing countries (cf. Latin America and China)
- Rapid increase of DINKs in Brazil, 1996-2006
 - Population growth:
 - Growth in # of households:
 - % of "nuclear" households:
 - Double Income households:
 - Number of DINK households:

1.42% per annum

- 3.21% per annum
- from 59.7 to 51.6%
- from 29.7% to 41.1% of total
- from 1.1 to 2.1 millions
- Characteristics of DINK households: higher education, better jobs, better housing and much higher income (over 70% higher than any other group, on a per capita basis). They also consume more goods and services, including appliances, cell phones, computers and access to the internet.

Policy Implications of Household Changes

- Unanticipated consequence of fertility decline?
- Smaller households more a consumption than a demographic issue?
- Demographic policy options in relation to composition are limited. Options with respect to ageing are best viewed under health and architectural planning. Improving the relation between smaller households and emissions would entail both economic measures (e.g. energy taxes), as well as urban planning (use of urban space) and architectural innovations (efficient multihome units).

Summing up...

- Generalizing access to quality SRH services immediately is good. As an intervention in population growth, it has limitations. Growth is primarily inertial, FP does not have retroactive effects, does not produce immediate results and depends on social development, which increases consumption. Urgent need is to drastically redefine development
- Urban growth is at a critical stage, given the sheer numbers of people and the importance of cities in future global economic, social, demographic and environmental scenarios. The environmental and social advantages of cities need to be brought out with proactive planning and participatory approaches
- Different population compositions have to be considered in emission scenarios but we are still skimming the tip of the iceberg in terms of how ongoing changes and different patterns of social organization in developing countries will affect consumption and emissions.