# Population and Science, technology and innovation

*Presentation by Jorge Bravo, United Nations Population Division/DESA at the 46th session of the Commission on Population and Development, 24 April 2013*

*Agenda item 5. Contribution of population to the theme of the Annual Ministerial Review in 2013*

# Outline

1. Science and technology in the ICPD Programme of Action
2. Recent scientific and technological innovations that affect fertility, mortality, migration
3. Scientific innovations in demography and their contribution to development planning

# 1. Science and technology in the ICPD Programme of Action

# Chapter XII of the ICPD PoA is dedicated to "Technology, Research and Development"

A. Basic data collection
B. Reproductive health research
C. Social and economic research

# Chapter XII of the ICPD PoA calls for:

- Strengthening population and development data collection, analysis, dissemination;
- Harnessing biomedical and social research on reproductive health (to improve methods for fertility regulation);
- Promoting socio-cultural and economic research on population policies and programmes, including linkages to poverty, consumption patterns and effects on use of resources and the environment; and for…

# Chapter XII of the ICPD Programme of Action calls for:

- "…research to improve the understanding of the causes and consequences of migration and mobility, whether internal or international" and "…to improve the quality, timeliness and accessibility of data on internal and international migration levels, trends and policies." (ICPD PoA, 12.25)

# 2. Scientific and technological innovations that have an impact fertility, mortality, migration

# Impact of recent Scientific and technological innovations on Fertility

Demand for contraceptive methods remains high (63% use, 12% unmet need, globally), yet significant discontinuation and non-use (Alkema et al. 2013) has spurred a new wave of research on contraceptive methods that are user-controlled, can be used privately and on demand, and have dual protection (against pregnancy and HIV)*

As fertility has fallen and childbearing is being shifted to older ages, Assisted Reproductive Technologies (ART) are playing an increasingly important role in fertility regulation (1.4% of births in the U.S. (CDC 2012) and 1% to 4% of children born in 2003 in Europe conceived with ART (Sobotka et al. 2008)**

# Impact of recent Scientific and technological innovations on Mortality

e-Health/m-Health: monitoring equipment with integrated connectivity, new technologies for mobile devices (phones, laptops, cameras, GPS, diagnostic devices)

Examples:

* Bangladesh, monitoring maternal and infant health with voice messages (MDG4);
* New pre-filled oxytocin syringes to prevent maternal haemorrhage (MDG5);
* Tanzania, text messages to track stocks of anti-malarial medicines (MDG6)

# Impact of recent Scientific and technological innovations on Migration

ICTs applied to sophisticated systems to entry and exit records and produce more accurate and detailed migration statistics;

Satellite television and internet greatly facilitate maintaining communication and cultural links of diasporas with their countries of origin

“Mobile money” (e.g., recent agreement in The Philippines) that allows remittances to be transferred cheaply and quickly to credit or debit card accounts

# 3. Scientific innovations in demography and their contribution to development planning

# Data collection in censuses

A recent review of the 2010 World Census Programme* documents a widespread use of modern technologies and ICT devices among UN Member States for census data collection and dissemination

Most commonly used technologies are GIS (58%), computer-assisted coding (42%), optical character recognition (38%), optical mark recognition (30%), and other scanning methods (37%), as well as the internet (40%), laptops (24%) and hand-held or tablet computers (10%)

# Micro-databases for cross-national comparisons of internal migration

- Full census micro data repository in the LAC region (CELADE/ECLAC), while IPUMS project (U. of Minnesota) has built a global repository of micro-data from 55 countries from all major regions of the world;
- The availability of these data and tools to process micro-data in an efficient manner has allowed for the production of the most comprehensive set of estimates on internal migration to date (Bell and Charles-Edwards, 2013)*

# Urban growth and human settlements

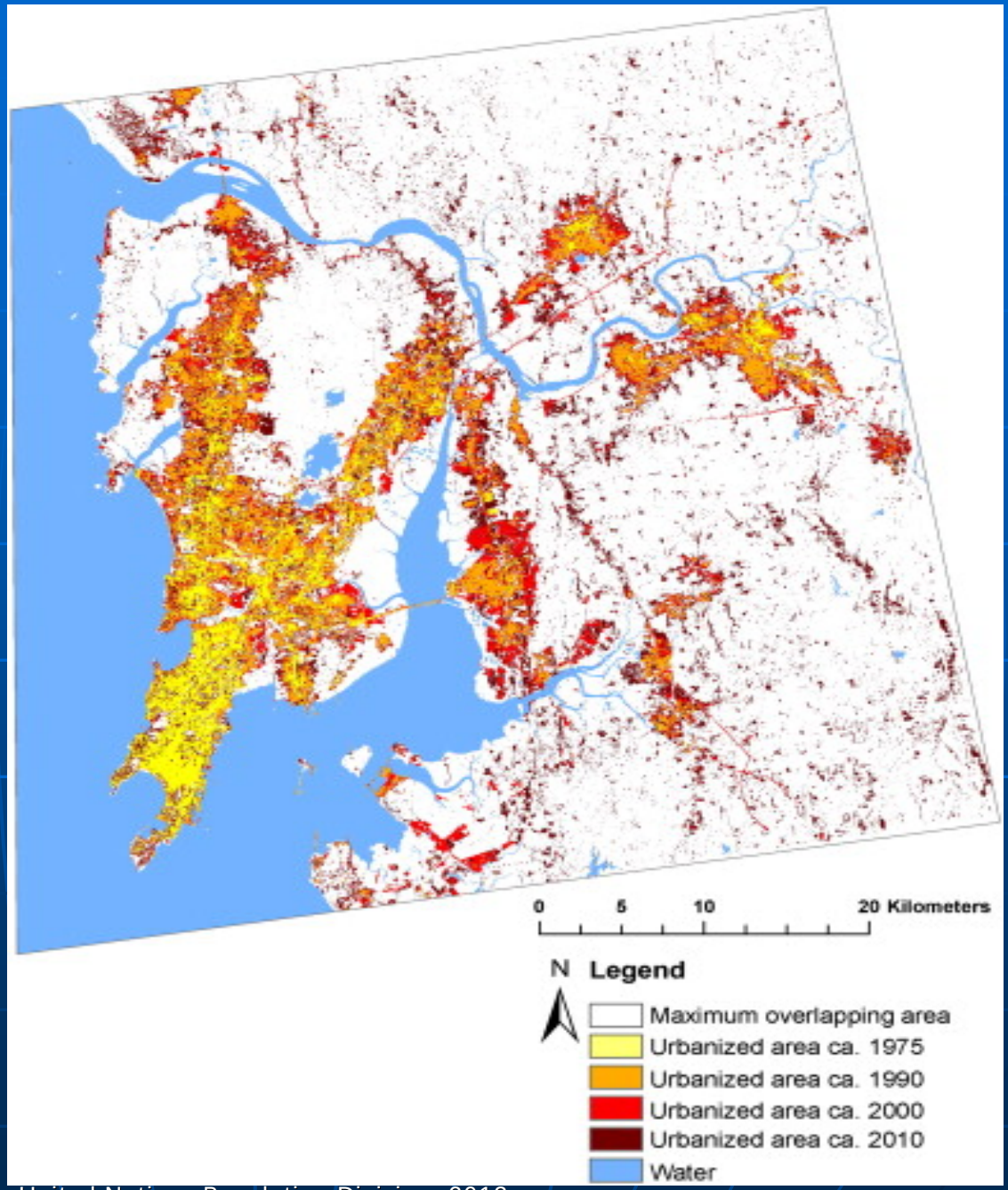
Combining traditional data sources that use administrative definitions of urban and rural areas with data on land-use and land-cover (with GPS and remote-sensing technologies) results in  a better understanding of urban growth and its implications for local, regional ecosystems and global environmental change.

This combined spatial-demographic approach serves to assess the growth of human settlements in low-lying coastal zones, in or near cities, forested areas, and the vulnerability of different populations to environmental and climate change

## City of Mumbai:

Urbanized area from 1975 to 2010

(Taubenbock et. al, 2012)




United Nations Population Division, 2013

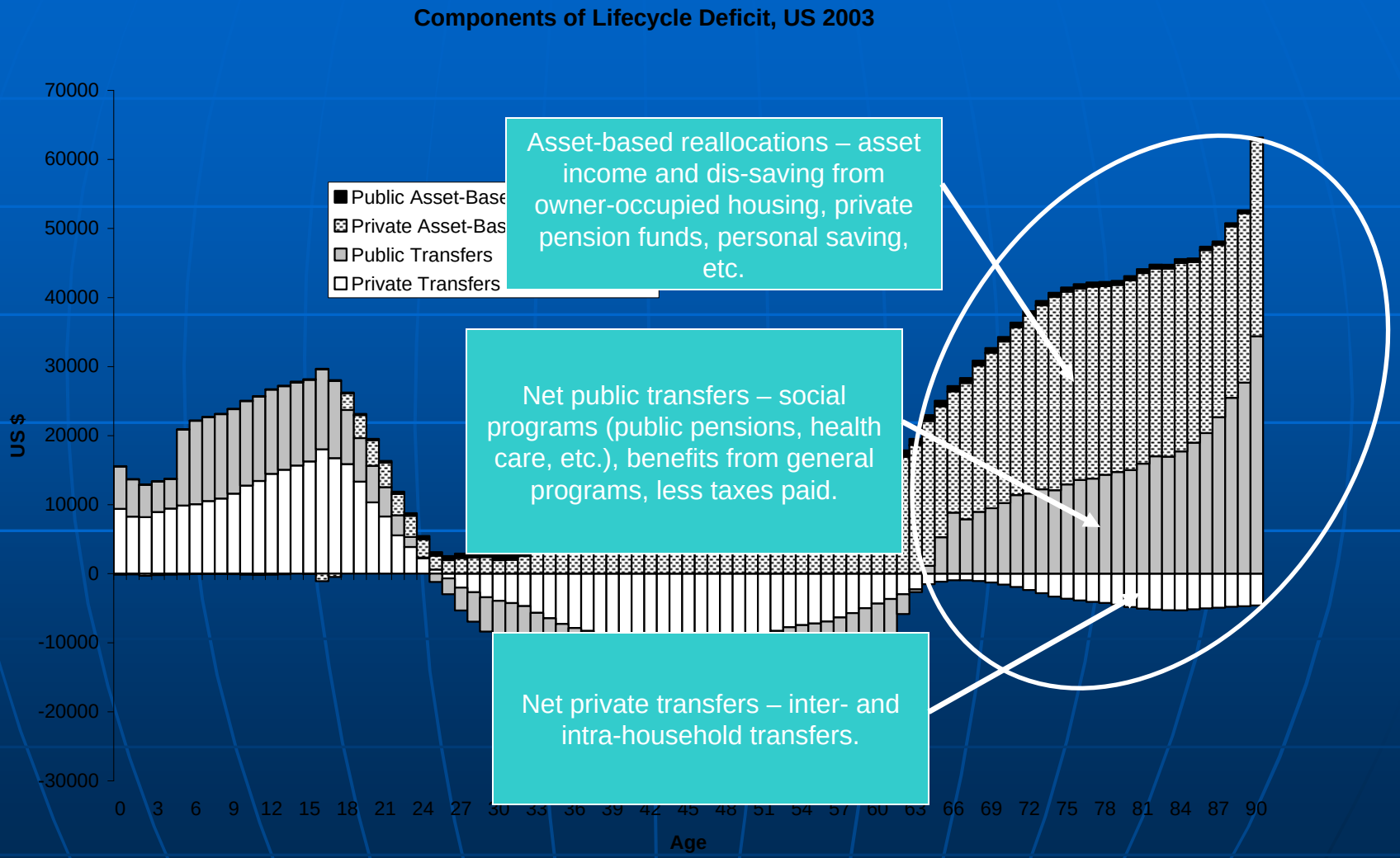
# Ageing and intergenerational transfers

New research on intergenerational transfers is yielding more accurate and more complete evidence on the economic life-cycle, and on how different generations support each other

In particular, innovative work on National Transfer Accounts is providing key information for policy-makers to assess and maximize the benefits of the demographic dividend, and to implement effective human capital, employment, and retirement saving policies

# Sources of financial support in old-age

## Data from National Transfer Accounts, USA

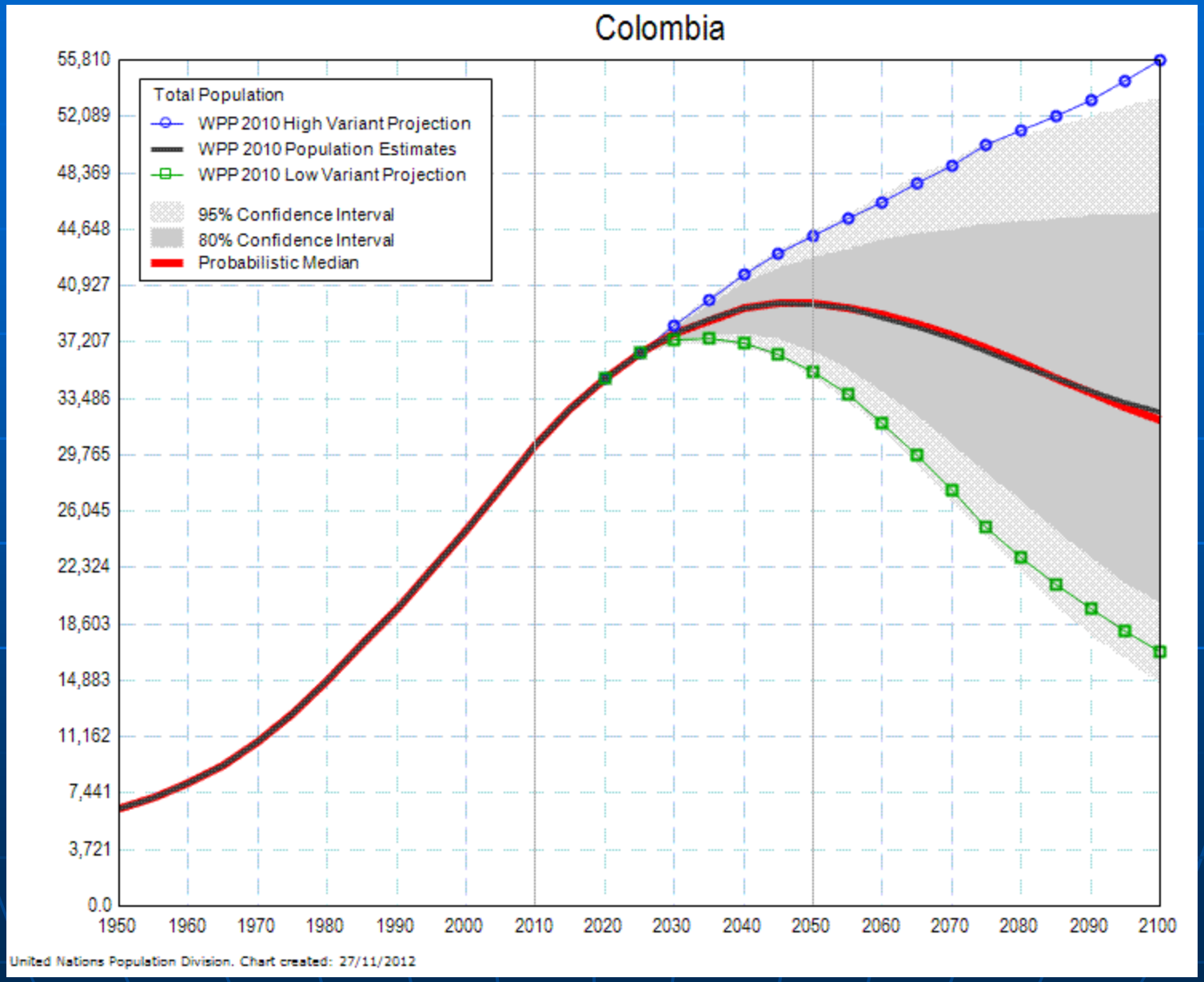



United Nations Population Division, 2013

# Population projections

Traditionally, population projections were done for a “medium”, “high” and “low” variants. Recent research applying stochastic models of fertility and mortality allows for probabilistic population projections

The Population Division has developed and applied these methods, and in the last revision of the World Population Prospects reports probabilistic projections of total population or some relevant sub-groups




United Nations Population Division, 2013

# In sum

Science, technology and innovation has been key enabler of demographic change (fertilty, mortality, migration)

Scientific progress in demography has contributed significant insights into the magnitude and policy options on various development issues

More comprehensive and systematic data on migration (both internal and international) is still needed for well-informed policy making

*Thank you*

http://www.un.org/en/development/desa/population/