

国総研セミナー

21世紀の世界人口動向 - 最新の 将来人口推計を踏まえて



平成13年3月

国際協力事業団
国際協力総合研修所

総研

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— 「国総研セミナー」とは…… —

国総研セミナーとは、国際協力事業団国際協力総合研修所が開催しているセミナーの略称で、国内外の有識者、援助関係者により、国際協力に関わる者を対象として開発援助の現状、課題、展望等の情報提供や意見交換を行うことを目的としています。

本出版物は、講師の了解を得て講演の要約と演説を掲載したもので、編集の責任は国際協力総合研修所にあります。

表紙写真：バングラデシュ・ジョソールの村(この村ではコミュニティ・ヘルス・プロモーターによる保健教育や啓蒙活動等が行われている)
(写真：国際協力事業団)

国総研セミナー

「21世紀の世界人口動向 - 最新の将来人口推計を踏まえて」

1. 日時：平成13年3月19日(月)15:00～17:00
2. 場所：国際協力事業団 本部 11ABCD会議室
3. 講師：Dr. Joseph Chamie(国連経済社会局人口部長)
4. 議事
 - (1) 開会
 - (2) 講演者紹介 尾崎美千生 国際協力事業団 国際協力専門員
 - (3) 講演 ジョセフ・シャミー国連経済社会局人口部長
 - (4) 質疑応答
 - (5) 閉会

5. 経緯

JICAでは平成13年度より人口問題に係る調査研究を進めるなかで、国連経済社会局人口部のジョセフ・シャミー(Dr. Joseph Chamie)部長を招聘し、「21世紀の世界人口動向 - 最新の将来人口推計を踏まえて」と題して講義をお願い致しました。

シャミー氏は、1977年から国連経済社会局人口部に勤務し、1993年に人口部長に就任され、1994年にカイロで開催された国際人口開発会議(ICPD: International Conference on Population and Development)では、事務次長を務められました。同氏は、国家人口政策の評価、人口統計動態の分析、人口と開発の問題等、人口問題の様々なテーマに対する造詣が深く、出生力、婚姻、家族計画、人口推計、国際人口移動、人口政策等に関する論文も多数発表されています。

今回のセミナーでは、最新の人口推計である「World Population

Prospects The 2000 Revisor(2000年度版世界人口推計)」*を参考資料として、この推計の総括責任者であるシャミー人口部長自身より世界の人口動向についてわかりやすく講演をしていただきました。

6. 講師略歴：1967-1970 インドにて家族計画に関し Peace Corps Volunteer として活動
1973-1975 レバノンのアメリカン大学で客員講師として勤務
1977-1981 国連西アジア経済社会委員会人口課勤務
1981-1985 国連経済社会局人口部人口推計課勤務
1985-1990 国連経済社会局人口部人口政策課課長
1991-1993 国連経済社会局人口部次長
1993 国連経済社会局人口部部长

7. 要約：PP5 ～ 9 参照

8. 講演内容：PP10 ～ 43 参照

* 講演中に出てくる「World Population Prospects The 2000 Revision(2000 年度版世界人口推計)」は下記の URL より全文ダウンロードできます。
www.un.org/esa/population/publications/wpp2000/wpp2000h.pdf

9. 報道記事：

- ・「特集ワイド 最前線 インサイド、人口増大と少子高齢化」毎日新聞 2001 年 4 月 6 日付夕刊
- ・(財)アジア・人口開発協会「人口と開発」2001 年 4 月、No.75

国際協力事業団 国総研セミナー

ジョセフ・シャミー国際連合経済社会局人口部長講演会
「21世紀の世界人口動向 - 最新の将来人口推計を踏まえて」

*The Lecture of the Director of Population Division,
Department of Economic and Social Affairs, United Nations
“United Nations World Population Estimates and Projections, The 2000 Revision”
IFIC Seminar, Japan International Cooperation Agency*

< 日時・開催場所 >

2001年3月19日(月)午後3:00 ~ 5:00
国際協力事業団 本部
11階 11ABCD

< Date・Venue >

Monday, 19 March, 2001 PM3:00 ~ 5:00
Room 11 ABCD, the 11th floor,
JICA

～ プログラム・Program ～

3:00 **開会**

Opening

3:00-3:10 **講演者紹介**

Introduction of the Lecturer

尾崎美千生
国際協力事業団
国際協力総合研修所
国際協力専門員

Mr. Michio Ozaki
Senior Advisor,
Institute for International Cooperation,
Japan International Cooperation Agency

3:10-4:00 **講演**

Lecture

ジョセフ・シャミー
国際連合
経済社会局
人口部
部長

Dr. Joseph Chamie
Director,
Population Division,
Department of Economic and Social Affairs,
United Nations

4:00-5:00 **質疑応答**

Questions and Answers

5:00 **閉会**

Closing

ジョセフ・シャミー博士（国連経済社会局人口部長）講演の様子



講演風景



**統計学者が世界の人口をどのように推計するのかを説明しているシャミー博士
（左手に持つ黒い箱を「人口に関する全ての情報」、
箱の中にある紙片を「情報」に例えて説明、P17 10 行目参照）**

セミナー概要

<講演内容>

1. 世界の人口は、キリストが誕生した2000年前には約3億人、コロンブスが新大陸を発見した1492年には、約5億人マルサスが人口論を発表した18世紀末には10億人未滿、と各々推計されている。10億人に達するまで、世界人口はきわめて緩やかに成長したと言える。世界の人口が10億人を越えたのは、ナポレオン法典がフランスで公布された1804年であると推定されている。20億人になったのは、産児調節運動を起こしたことで知られるマーガレット・サンガーがジェノバで人口会議を開催した1927年と推定され、この間120年あまりで人口は10億人から20億人に倍増した。その後、アメリカで経口避妊薬が承認された1960年には30億人に達し、1960年代末には年率2%というこれまでの人口増加率の最高を記録している。以後、「国連人口開発会議」がブカレストで開催された1974年には人口が40億人に達し、エイズが地球規模で広がりを見せはじめた1987年には50億人に達している。即ち、この間わずか10数年で世界人口が10億人ずつ増加するに至った訳である。1999年には世界人口は60億人に達し、現在でも世界全体で毎年約7,700万人の人口増加が続いている。
2. 国連の世界人口推計は、50年間の人口の推移を対象としている。長期の予測が可能な理由は、人口推計の算出方法にある。人口統計学では、出生、死亡、移動の3要素に男性、女性、さらに時間を加味し、人口の推計を行っている。人口推計の信頼性を表す例として、人口が約25億人だった1950年代初期に、国連人口部は2000年の世界人口を62億人と予測したことが挙げられる。現在の人口は約61億人であり、およそ45年前の推計はかなりの精度であると言える。人口学者は、出生力、死亡率、移動の傾向を分析し、科学的に人口を

推計するが、その推計結果を利用する場合には、予測結果に対して準備をするという対応が適当であろう。人口推計は、教育、医療保障、社会サービス、住宅、雇用、環境、社会保障、防衛、経済市場、製品やサービスの提供、開発、選挙などのあらゆる人間の活動に対する政策や計画策定に必要なものとなっている。

3. 世界人口推計によると、2050年の人口の中位推計は93億人、上位推計は109億人、下位推計は79億人である。先進国の人口は現在12億人であるが、出生率の低下により人口が減少する国もあるため、2050年でも先進国人口はほとんど変化しないだろう。一方、開発途上国では、現在の49億人から2050年には82億人に増加すると予想される。
4. 世界人口は年間で約7,700万人増加しているが、そのうち21%がインド、12%が中国、続いてパキスタン、ナイジェリア、バングラデシュ、インドネシアの6カ国の増加によるものであり、増加の半数を占めている。また、増加人口に占めるインドの割合は、中国、パキスタン、ナイジェリアのそれを合計した数とほぼ同じである。
5. 1998年の世界人口推計では、今後5年間にエイズによる死亡者が多数発生する国は、34カ国であったが、2000年の同推計では45カ国に増加した。従って、今後5年間にエイズを原因とした死亡者は1,500万人以上と推定される。また、HIV感染率は、ボツワナでは34%、ジンバブエでは25%に上る。しかし、それでもなお、2050年にはボツワナの人口は37%、ジンバブエの人口は80%増加する。
6. 高齢化問題に関して、60歳以上の人口は、現在の6億人から2050年には20億人に増加し、80歳以上の人口はより高い割合で増加する。100歳以上の人口に至っては、最も高い割合で増加し、2050年

にはその数は現在の16倍に上る。

7. 結論は、次の三点である。第一に、20世紀は人口爆発の世紀であり、この時代に生きる我々は、最も激しい人口変動 年間人口増加率の増大、死亡率の低下、長寿、最短期間での10億人増加、出生率の低下、都市化 を目撃しているという事実を知っておくことが重要であるという点である。それは、20世紀の出来事を基にした政策や計画を策定しても、21世紀は前世紀とは異なるからである。人口統計学者としては、世界人口が16億人から始まり最後に61億人となった20世紀に生きていたというのは、幸運だと感じる。第二は、20世紀と21世紀の相違よりも、21世紀とそれ以降の相違の方がより大きいということである。21世紀以降には、一層の人口増加、高齢化、途上国への人口集中、都市化が起こるだろう。そして、人口移動とグローバリゼーションにより、多民族、多文化化が更に進むであろう。第三は、今日と未来の世界に効果的に対応するためには、現在と将来の人口傾向を理解した上で、大胆なビジョンと強いリーダーシップが求められるという点である。

<質疑応答>

- Q. HIV/エイズへの対策を講じたことにより、状況が改善された国もある一方で、益々状況が悪化している国もある。今後HIV/エイズを巡る状況をどのように見るか。
- A. 短期的には悪化し、長期的には改善すると思う。HIV/エイズは実態を把握するのが難しく、把握するまでは状況は悪化するだろう。しかし、人々は行動を変革するであろうから、長期的には状況は改善の方向に向かうと思われる。
- Q. 2000年度版の世界人口推計が4億人上方修正された理由の一つに、バングラデシュ、インド、ナイジェリア等で出生率の低下が止まっ

たためということであるが、バングラデシュはインドと比較すると出生率が低いと聞いており、矛盾を感じる。

- A. バングラデシュ政府が発表した自国の出生率は、実体よりも低く見積もられていると考えられる。国連人口部は各国が発表したデータをそのまま採用せず、人口部で徹底的に調査し、補正した上で評価している。
- Q. 日本の国立社会保障・人口問題研究所の予測では、2050年の日本の平均寿命は84歳としている一方で、国連の2000年度版世界人口推計は88歳としている。88歳は若干高すぎはしないか。
- A. 楽観的かもしれないが、医学の進歩により平均寿命は2050年までには伸長すると思われる。88歳では低すぎるのではないかと見ている人もいる。
- Q. 2000年版世界人口推計では2050年の人口が4億人上方修正され、16カ国で出生率低下が見られない一方で、死亡率は低下している。開発途上国では出生率が低下し、先進国では出生率が回復することで、出生率は収斂していくであろうか。
- A. 日本やイタリア、ロシアではこれまでの歴史上経験のない低出生率となっている。先進国の出生率はある程度回復すると思われるが、置換水準にまでは回復せず、人口は減少していくと思われる。
- Q. 人口の高齢化に関し、日本では65歳以上を高齢者としているが、個人的に、70歳以上を高齢者として扱うべきであると思う。その意味では、国連人口部が60歳以上を高齢者として扱っているのは若すぎるものと思われる。
- A. 60歳以上を高齢者としているのは政治的な観点からである。60歳以上を高齢者とする、60歳になればバスや電車、ホテルなどを安く利用できるようになる。また、平均寿命が低い開発途上国では、70

歳以上を高齢者とする、高齢者の割合が非常に低くなる。しかし、個人的には高齢者というのは80歳以上であると思う。70歳代でも十分に活動的に過ごしている方は多く、またそれは可能なことであると思われる。

Introduction of the Lecturer

Mediator (Mr. Ozaki, Senior Advisor, Institute for International Cooperation, JICA)

Good afternoon ladies and gentlemen. First of all, I would like to thank all for taking part in this Institute for International Cooperation seminar and I am very grateful for all of you to take time to attend this seminar despite tomorrow being a holiday.

Let me first of all introduce myself. My name is Michio Ozaki. I'm the senior advisor of Japan International Cooperation Agency. Three months have passed since we entered the 21st century. And since the beginning of last year, the 20th century has been discussed by those who evaluate the 20th century positively as the century which there was dramatic advancement in science and technology, where as the pessimist take the 20th century as the century of global warfare. Of course it depends on every subjective values of each individual in the society.

The significance of history may differ. I think there was a major impact in the events for human kind in the 20th century, which nobody cannot deny. That is the population explosion in the developing countries. The population of the world in the 20th century has reached 6 billion which is a 3.634 fold increase from the previous century. The 20th century was indeed a century of demographic explosion. Those who are on space ship earth have been increasing in the 20th century. According to statistics by Dr. Chamie's department, population will be increasing every year and this increase leads to various problems such as urbanization, poverty etc.

Institute for International Cooperation has been working on the population issue since last year. We had a talk by Dr. Peter Donaldson of the population reference bureau of the United States and we had a talk by Dr. Bongaarts, the vice president of population council in New York on February.

Now we are happy to have Dr. Joseph Chamie of the population division of

United Nations with us. I'm sure all have his curriculum vitae in your document kits and we will not go into details because of the time limitations.

However, I would like to say that the United Nations population division, where Dr. Chamie is the head, is really playing the important roll, and is perhaps the top of the various organizations that are projecting world population.

In mid-April we'll have the United Conference on population and Development. They will be discussing as one of the agenda items when to have the next International Conference. One of the key persons who make those decisions is Dr. Chamie and you are of course welcome to ask such question about the U.N. and about population policy issues and other topics in general during the Questions and Answer session. Dr. Chamie knows so many interesting things about population and his talks are always very enlightening and entertaining. Because he gives us many anecdotes about population issues and about all kinds of interesting issues about both East and West and modern and old. I'm sure that we will have so many interesting questions for Dr. Chamie at the end of his presentation. So we would like to hear from Dr. Chamie about the 21st century from the standpoint of population and the U.N. world population and projections that are envisioned by Dr. Chamie.

Lecture

Dr. Chamie (Director, Population Division, Department of Economic and Social Affairs, United Nations)

Thank you Mr. Ozaki for that kind introduction.

Ladies and Gentlemen. It's my honor and a pleasure to be here today in Japan to address you. Let me begin by thanking the organizers of this lecture, JICA for their kind invitation and also I'd like to thank those who work behind the scenes to bring me to Japan and to care of my needs while I'm here.

It's always a pleasure to visit Japan especially at the beginning of spring. It's

also nice to come and see so many friends, as a colleagues and to have such esteemed demographers here today, Prof. Kuroda, Prof. Kohno. I welcome you. It feels strange to be speaking in front of you when for so many years I sat as a student and listen to you and read your writings. Several things I'd like to do are to apologize for not speaking in Japanese. I come to Japan in the early 80's for the first time and at that time my children were very small and when I came back I told them how impressed I was with Japan. Second time I visited Japan a few years later. I told them the same thing. And every time I come back, I tell how much I'm impressed with Japan. They said to me when they were younger "we are tired of hearing about Japan" and "we think in your former life you must have been Japanese".

This life I'm an American but I have a great deal of admiration for your culture and your achievements. Because I don't speak Japanese, we have interpreters. And from the outset I'd like to thank them for the job that they will do taking my American English and making it beautiful Japanese.

Now I have about 40 minutes or 50 minutes. So I want to take you to this lecture having followed people like Peter Donaldson, John Bongaarts and others. I have a high level to try and match but today I will try to see if I can keep you awake for an hour, and also informal but perhaps most importantly to keep you entertained. I find with students and government officials' entertainment is very important. Because they listen to so many lectures as we began with the 21st century, it seems appropriate to look ahead to see where we are going more specifically today. I want to look where we are heading in the year 2050. However, before we start looking into the crystal ball and looking forward, I would like to do 2 things; firstly I want to give you a historical overview, because without knowing where you have been, it's difficult to tell how far you are traveling. I'll do this by talking about what I call population milestones, billion milestones, where we went to 1 billion to 2 billion and so on.

Second thing I'll do is addressing a number of questions that often arise when

we talk about projections, so let's begin the historical trip.

Populations for thousands of years grew very slowly. 2000 years ago, the time of Jesus, in his period, the population of the world we estimated was no more than 300 million people, much less than one billion. 300 million people was for the entire world.

When Christopher Columbus crossed the Atlantic and hit the new world by mistake, by the way, because he was trying to go to India and not trying to go to America. He was trying to go to India, when he left the shores of Spain. The world population we estimate was around half a billion in 1492. We had about 500 million people around the world. When the famous Englishmen reverend Thomas Malthus was alive and writing his famous essay at the end of the 18th century, the world had not reached 1 billion, so you see for thousands of years the growth of the world was relatively slow and had ups and downs, growth period and then drop due to disease, famine, all sorts of calamities. Well sometime passed and the world reached one billion and what was happening was that, well, France approved the code of Napoleon for its laws. It set up its first set of laws by any country regarding property, the family, and individual freedom. But that was for men not women. The code enshrined the principle in the law all individuals are equal before the law and that code was established as a standard of many countries around the world.

The year was 1804 that's when we reached 1 billion. At that time families were large and mortality was high and 1804, what population was the population of China? The population of China around 1804 we estimate was around 300 million people. Today it has close to 1.3 billion people. India in 1804 had well under 200 million people. Today, of course, India has about 1 billion. The United States, in 1804, had 6 million people, smaller than Tokyo, smaller than New York. The United States in 1804, had 6 million people. Today it's 47 times larger today then with these population of over 280 million people.

Some time passed and the world reached 2 billion. In that year of 2 billion the

famous Margaret Sanger organized the population conference in Geneva. She organized it. No women attended that conference not even Mrs. Sanger.

2 billion was reached soon after that. It had taken thousands of years to reach 1 billion in 1804, but only several years to reach from 1 billion to 2 billion. Again some time passed and the world grew to 3 billion. 3 billion people occurred in the year when the U.S. drug administration gave approval for the marketing the oral contraceptive. The consequences of the oral pill have been revolutionary among other things. It gave women control over their reproductive behavior. The year of 3 billion was 1960. At that time mortality rate were falling quickly in developing countries but fertility remained high. As a result of that difference the growth rate in the early 1960's, the time when John F. Kennedy was elected, was about 1.9% and by the end of the 1960's, end of that decade, the world hit a historic high for world population growth at around 2%. Any of you who were born in 1960, experience the highest growth rate for the world that we have recorded. And it will probably remain the highest.

Some time past again the world reached 4 billion and that year when we reached 4 billion the first United Nations conference was held on population and development in Bucharest. The year of forbearing was 1974. The world population plan of action was adopted by consensus. And it adopted a key principal, which was adopted again and reaffirmed in Cairo, which said "that all couples and individuals have the basic right to decide freely and responsibly the number and spacing of their children and to have the information, education and means to do so. In 1974 there were 4 billion people.

Some time past and world population grew to 5 billion. By that time HIV/AIDS had become a global epidemic. Few governments had policies or programs in place to halt or even to slow down the spread of the infectious disease. That year of 5 billion was 1987 and even the ones, here who are very young, were born by then. The population growth rate had slowed down but the absolute growth in terms of the numbers was reaching its peak. And in the late 80's, about 86 million

people per year, shortly thereafter the world population grew to 6 billion and this again was a record in a matter of 12 years.

The world added 1 billion people from 5 to 6 billion people in a matter of 12 years. This 12-year period is the shortest length of time that we recorded to add an additional billion. This was in 1999. And we don't expect this record to be broken either.

Today the world is growing about 77 million people per year. When you think about China 1.3 billion, India 1 billion, United States 283 million, the 77 million sounds rather small. But 77 million is the equivalent to the following member states and apologize for reading this quickly but in order to get through the list we have to go quickly. Here are the member states that 77 million people represent:

Singapore, Armenia, Uruguay, Lebanon, Liberia, Albania, Congo, Panama, Mauritania, Mongolia, Jamaica, Oman, United Arab Emirates, Latvia, Lesotho, Bhutan, Macedonia Slovenia, Kuwait, Libya, Botswana, Estonia, Gambia, Trinidad and Tobago, Gabon, Qatar, Mauritius, Swaziland, Guyana, Fiji, Cyprus, Cameroon, Djibouti, Bahrain, Comoros, Equatorial Guinea, Solomon Islands, Luxembourg, Cape Verde, Suriname, Malta, Brunei, Bahamas, Moldives, Iceland, Barbados, Belize, Andorra, Samoa, St. Lucia, Sao Tome and Principe, Micronesia, St. Vincent, Tonga, Grenada, Kiribati, Honduras, Seychelles, Dominica, Antigua and Barbuda, Marshall Islands, Monaco, Liechtenstein, San Maria, Palau,

Yes, in one year we add the population of these countries to the world population. 77 million people represent of 1/3 of the membership of the United Nations countries that I mentioned 1/3 are added every year. Now if you look at these 4 questions that are often asked to people who do projections.

First question is what the usefulness of doing a projection for 50 years is. No one knows what is going to happen tomorrow. How do you know what's going to happen in 50 years? Well, projections I will argue is that it's extremely important having profound implications in every society and each individual. They provide us with a demographic compass. They tell us where we are likely headed. And

who will be around and what kind of world will be in the future? Projections are vital for policies and plans and program direction to virtually every aspect of human activity which includes education, health care, social services, housing, employment, environment, social security, defense, economic markets, product and service provisions, development and of course political representation.

I have a letter in my office which I received a couple of days ago from a general manager at General Motors. I have this letter on my desk because in it he writes me and says “Dr. Chamie, I’m very pleased writing you. We use your projections which we find really useful for forecasting product development. And where are we going to sell our cars?” When my boss comes to me and said “Your work is not very useful. How do people use it?” I’ll show them the letter from General Motors. Projections are necessary where you build the factory, who will buy your product and what is the age structure for the population?

Second questions are how do you do these projection for 50 years?, what kind of science do you use? and how can you predict 50 years into the future? Well I began by saying it’s like anything. Whatever it is, whether it’s economic or population, anything that deals with the future. It has a certain degree of uncertainty and the further you go out, the greater the uncertainty because of course future means uncertainty. However population projections are much more accurate and reliable than the weather forecast, the weather forecast is usually for tomorrow and in most cases 5 to 6 days. We do 50 years and we call it medium. We go to 100 years. It is long term, so when we talk about projections we are not talking 1 week, one month, one decade. We are talking 1 century. Medium varying projection that you have in front of you are for 50 years.

Now why is this the case? The weather changes. You have high front, low front, weather coming in, rain, snow lots of interaction. But ours is very simple. We have only 3 ingredients, fertility, mortality, migration. Even the child in first grade can count to 3, fertility, mortality, migration. And you mix that together with 2 sexes, men and women. And you put it over time and that’s what

demography is about.

So when you have someone speaking to you, demographers such as John Bongaarts or Peter Donaldson or Prof. Joseph Chamie, you can explain to them that, yes, the 3 ingredients are fertility, mortality migration mixed 2 sexes together over time and that is basically demography.

Now these projections are very simple extrapolations. Using a methodology, using very explicit assumptions, we tell you what we are doing now, how to explain to people who are not demographers, how to do this. I brought some visual aids for you.

Let's see if you can imagine the black box to be all our knowledge about population. You can't see in the black box. Everything is in there. And what do you find? What's in the black box? Well what demographers do is projections. Try to open the box and what do they find? They find darkness after darkness. They start finding shred of information from all parts of the world, China, India, South Africa, over 200 area in countries. Pieces of information sometimes a small scrape, other like the green longer story. Demographers take all of the information that comes from so many places from censuses and surveys and you do your census and they ask you:

What is your sex? What is your age? Where do you live? Are you married? Are you pregnant? What are you?

We collect all this information and try to put it together and a lot of it is messy. We need more information especially for countries in Africa. For the developed countries, it's pretty good. Japan is in here, we know about you 127 million approximately. The Americans are in here but they missed about 2% of the population. So we have to adjust. That's what we do. We take all this information, we examine it together, evaluate it, organize it, we adjust it, we talk to it, we look at it under a microscope and then a magic "Viola", there are the projections.

That's what you have in front of you today. "World Population Prospects The 2000 Revision" we have produced over 5 million separate population statistics

for 220 countries and areas over a 100 year period. Out of that box, we first produce it in digital form in diskettes and CD's.

Now we are moving to CD disks. Then after we produce the number, we prepare the reports. The report in front of you and it has a Japanese summary at the end, for those of you would find it helpful. After the summery we produce 3 volumes each one has 700 pages. So together 5 million statistics over 1000 pages of publication is produced for one revision of the United Nations population revision.

Now we can go into more technical discussion on how this is done if you wish in the Question and Answer. But I'd like to skip over that at this point. I'd map it out in my paper exactly how we do that.

I would like to move now to the third question, which people ask me; Is this what you do? How good are you? What's your track record? They say population projections are the future; How do you know what the future is going to be? Well I tell them we are doing much well than the weather forecast, the economist and the people in Las Vegas, how well have we done.

When I was a small child the population division was doing projections. They started in the early 50's. They did not do it country by country. They did by groupings or regions but they had projected for the world. But early demographers at the time for today 50 years almost 45 years ago. The United Nations was projecting what the world would be today. Well if you were alive in the 50's what would you guess for the world at that time? The world was about 2 and half billion? The demographers in their wisdom and they had this black box with not as many pieces of paper. They made a projection, published.

You don't have to trust me. You can go to a book shop and see the publication made by the United Nations populations division in the early 50's. They made a projection for the world population in 2000 setting it 6.2 billion. We estimate it at 6.1 billion today, which is not so far from the projection in the early 50's. In evaluating our work, we had a independent body which considers our work, that

is the United States National Academy of Sciences. Let me read you a quotation several sentences.

Quote: “the panel therefore concludes that these current world populations projections to 2050 are based on reasonable assumptions and provide plausible forecast of the world demographic trends for the next few decades. The relative small global errors made in the past projections are consistent with the conclusion.” I find that a very good indication of our work is written in some. I think it’s fair to say that the population division with regards to it’s division has an excellent track record.

Finally, question four, before we come to the projections, if you are unhappy with message we are giving, you should not shoot the messenger. If you are unhappy with the message, you should not blame the messenger. Consider for example, the weather forecast. They tell you it’s going to rain tomorrow. So you are to blame him for the rain? No, ideally you think about the forecast and decide how you are going to deal with this information. You may choose to ignore the forecast. You may look up and you say “it’s not going to rain, I’m not going to believe it” or you may say “yes, I believe the forecast.” And you may take some action. You can carry an umbrella or a rain coat. And the same way we demographers provide you with population projections discussing and describing likely trends of mortality, fertility, migration. Don’t blame us because coming out does not reflect on these outcomes. And decide how to choose to deal with them. You may choose to ignore them or you may prepare to take some actions, in other words prepare for a rainy day after.

In my experience at the United Nations, the last few years governments became unhappy with the message and they came to blame us. I tell them you should blame us when we don’t do our jobs. Our job is to give you the message with the best objective scientific way. If you are unhappy with the message, don’t shoot the messenger.

Now let’s turn to the principal finding of the revision, which are in front of

you.

First point has to do with continuing growth.

Today as I said the world population is 6.1 billion and we are growing at 12% about 77 million people per year. It's pretty easy to understand where this growth is occurring, half of the increase of the world population is occurring in 6 countries. There are some 190 countries or so in the world but 6 among them account for half of the growth. What are the 6? And what are their orders? The biggest single contributor giving 1 out of 5 people every year is Indian

India is giving you 21% of the growth. So if we look at 5 people here, that mean, if we take the gentlemen here and the 4 over there is going to be Indians. One of them will be an Indian. The second country is China that gives us 12% followed by Pakistan, Nigeria, Bangladesh, and Indonesia. They count for half.

Now what is interesting? Let's look at India. Take India which is number 1 and take 2, 3 and 4, that means China, Pakistan, Nigeria. India is the equivalent of those 3 countries combined. To give you an idea how much India is growing, India is adding, I repeat, every year the same growth as China, Pakistan, Nigeria combined.

Now there is a range of projection of the future. We have a medium, which we take about 9.3 billion, but there is range. There is a possibility we can have 7.9 as a low and 10.9 as a high. And as we said about weather, we can tell you there is a 50/50 chance that it will rain tomorrow. We have a range where the population is likely to reach. It could be around 7.9 or it would be around 10.9. It depends on the projection of what is likely to occur and these decisions about what is going to occur. They are individual discussion. Their decision about what is going to occur needs individual decisions. You, men and women, who are not married in this room, who are going to have children or not have children, are part of that assumption. How many children you are going to have? Now my view is that the women decides, they have here some half a dozen women at most in their reproduction ages, you start thinking how many children they are going

to have. I don't think they are going to have 5. Because when I say 5, in Japan or Europe most women smile. No way 5, maybe 2 or 3, maybe 1, this is what they are thinking about. That's why the range can be fixed so closely. We have consequence, on the idea of family size, people are aiming for the same idea, boy and girl, perfect enough for the back seat of a car.

Secondly, Most of the growth is all in the developing world. Nothing new. Almost all of the growth is occurring in the developing world. If you take two groups, the developed and the developing, the developed as a whole change very little, about 1.2 billion. They will stay about that growth because their fertility is relatively low, in some cases very low. We project 39 countries by 2050 to be smaller than they are today and Japan will be one of them. Your ministry makes these projection, we check those pieces of information.

You are going to decline probably because of your low fertility. It doesn't even matter that you are going to be living longer, the critical variable is fertility. We have 39 countries. We project by 2050 these countries like Japan, Germany will be about 14% smaller than today. And again I tell you that there are three variables in demography, birth fertility, deaths mortality, and migration. Japan could forget about migration. Since you have very little migration coming from abroad, we have two ingredients, that is birth and deaths. So it's very simple arithmetic. If we have more birth than deaths, you grow, if you have more deaths than birth, you decline. You are having more deaths, going to be occurring in the next few years and decades than births. So you are going to be declining in size and become older, which is no surprise. Other countries will grow even less and decline more. Italy and Hungary for example, 21% decline. In fact Italy is 2050 will be exactly smaller than in 1950.

There are other countries that are going to be decreasing more rapidly. Russia, Georgia, Ukraine will decrease from 28 to 40%. Now that's the countries in the developed region. There are some that are going to grow much larger by 2050. Canada, which we project, became somewhat higher fertility, and migration will

be 33% larger than its today, Australia 38%. United States between now and 2050 will increase by 40% from 283 million, according to our projections, to 394 million. Again, three ingredients, birth, death and migration. They are way ahead of everybody else. They are bringing 1 million migrants every year. About half of the migration will be going to the United States. A million includes documented and undocumented. Their fertility is much higher than most developing countries. There are many reasons but we don't have the time to go into them.

Thirdly, the developing regions are projected to go from 4.9 to 8.2 billion in the next 50 years, by decline in fertility and improvement in mortality. In the absence of such declines, the population of the developing world could reach 12 billion. So we will see a great deal of growth in the developing world. We should keep in mind there are many achievements in developing countries, the fertility, for example. In some of these countries it is very similar to the developed world for example Brazil. Brazil has about 2.2 children per woman, while China has 1.8 and Tunisia, a North African Muslim state, has 2.1. So we can see the rate has been coming down.

Once I was asked a question in Santiago a couple of years ago. There was a Brazilian demographer started his lecture by saying "we have lost 40 million Brazilians. Does anyone know where they are?" Then he began to explain what had happened to their 40 million Brazilians. They have been missing. Have they been kidnapped? What happened to the 40 million? What he is talking about is the following; the United Nations population division made a projection for Brazil in the early 60's. In the year 2000, the population was 40 million less than projected. So we are saying 40 million, have been missing, because we did not expect fertility was going down so rapidly. What you see my point here is that there is much diversity between countries and within regions. Every statistician knows that when you average, the average is mask. You have highs and lows in the average. They are the product of these things. Now we have some demographers and some non-demographers, and people ask why there are

differences and the diversity, why some countries are growing and why some countries are not growing. In order to get that question, You have to take a demographic course at the university. I don't have that time today, but I can help you understand. Imagine two households. Household 1 is a rapidly growing population, while household 2 is slowly growing population. What do you hear when you go to those families? In the household 1 what do you hear? When you go to the household 2, what do you hear? Well, let us see, here is what I think you hear in the household 1,

“Babies crying”

In the first household have you heard anything other than you hear babies crying and laughing and playing? Now let's go to the second household.

“Opera Music”

You hear music and in this case you hear opera by “Puccini”. By the way, this is Puccini “Giani Fucci”. There is lovely women Lonella, pleading with her father to let her marry her young man, who she is madly in love with, and if he doesn't permit her to marry him, she will go to the bridge and jump into the river, killing herself. If we have more time we do all of it. But we don't have more time. In the two households, one has children and another enjoys opera Lifestyles. How does the differences come? Some people choose a child, while other families choose no child to have music, plays, vacations, BMW lifestyles, Gucci suits, Gucci handbags, hair dressers, lots of disposable money.

Why should I have children when I can live with my parents for free, free rent, free food? I take my income, I go to Europe, the United States, Japan and I spend my money on myself because the government is going to take care of me in my old age. I don't need to have children. That is what is accounting for the fertility levels.

There are many other factors but I want to leave you with a very close example of the two households. Let's move along. We made a revision of world population projection two years ago. We do it every two years. We did one for this 1998-

2000 with a difference of about 400 million. Why is there a difference? If we were identical, then you'd be looking at me rather strange, then you would not do any work. It's the same number you gave me two years ago. There is a difference because we evaluate each country separately. We don't evaluate the world as a whole. We start from the bottom. Each one of the country is done separately by about half a dozen or 8 people but we have our entire division that is helping them. They are done separately. We sum it up. We come up with a total, and we have about 400 million less or more than we did two years ago mainly because of higher fertility for countries. We had higher starting points for several big countries, mainly Bangladesh, India and Nigeria. Small differences in India, for example, makes a very big difference and this revision, for example, the fertility for India for the year 2000 was 3.3. In the last revision, fertility rate for India was 3.1. 3.3 versus 3.1 is small difference but a big change for our 50 years, same for Bangladesh and Nigeria. Now another finding has to do with life expectancy. Situation is improving. We have continued to project improvement in life expectancy. There is a 12 year gap between the developed and developing countries. We see that gap has been narrowing. Now let's move to one important aspect of mortality; HIV/AIDS. Big crisis in a nutshell. What we see is a bad situation is getting worse.

In 1998 we saw a very bad situation with AIDS specifically in Africa. The situation has become worse in terms of mortality, morbidity. We will see a large number of excess deaths due to AIDS and population loss over the next 5 years. In the 98 revision, we had 34 countries which we projected. In this revision we have 45. We have gone from 34 to 45 because of the spread of the infection and we are estimating in this 5-year period excess death of more than 15 million deaths. Nevertheless, even with AIDS crisis, these countries continue to grow. The most we saw is a decline in life expectancy in some countries but a continuation in population growth.

And let me give you a few examples. Let's look at Botswana. With the

incidences of HIV estimated at 36% again, that means out of 3 people 1 has HIV positive. In some other countries it is 25% like Zimbabwe. But despite that, by 2050 Botswana population will have grown by 37%, and Swaziland and Zimbabwe also growing by 80%. So, despite the AIDS epidemic which means a great deal of human loss and misery, we see an increase in the population. Another point we should stress is aging globally. The number of older people is going to be increasing rapidly more than tripling for those about 60. Increasing from 600 million to 2 billion and the increase for those that are really the oldest about 80 is even going to be more. Marketing increase for those over 80 and those above 100 will increase most rapidly. I understand that you have number who are over a hundred globally. We estimated between now and 2050, not a 10 fold but a 16 fold increase in the number of people above 100 in the world.

In many countries we have already reached the point where the number of elderly people are more than the number of the children. The implication of aging are enormous. They have a great deal of impact on society.

Now I am often asked if population is aging. What can we do about it? What can we do? Well, perhaps my answer can be best reflected in what I put in my box I bought today, and this primarily the advice I'd give to Americans not to Japanese, but it may be appropriate for most of the developed world. This is a piggy bank. Piggy bank for savings for the future, so I have 3 pieces of advice for you, for the future.

First advice is prepared for your pension and old age.

Second one is prepared for your pension and old age.

And finally third piece of advice is prepared for your pension and old age.

Three pieces of advice and a piggy bank is a good thing to start. Finally tenth point deals with international migration as predicted to be high in the 21st century. And many of the developing regions will be increasing there. All estimates about 2 million per year and because of low fertility in most developing countries, migration will have a very large impact without migration. The population of the

developed region will start declining in 2003 rather 2035. Let me conclude now a few minutes before 4.

3 points in conclusion and they are not so pre-determined. 3 points.

First you have to keep in mind that we witness in the 20th century the most remarkable record breaking demographic century, ever recorded. It's important to keep that in mind because if you base your policies programs in what happened in the 20th century. The 21st century is going to be different from the 20th century. I tell people that the 20th century has the most gold medals than any century before and after. Probably more gold medals than all of them combined. It had more "first" than all the other centuries and probably the sum of all the centuries in times of demographic behavior.

I feel fortunate to be living in that century as a demographer. It's similar to being a sailor at the time of Christopher Columbus. A great deal undiscovered great challenging world. Prof. Kuroda and Prof. Kohno and other demographers are very fortunate to be living in that time. Because in the 15th century they had very little work to do. In the 20th century, they had a great deal of work to do and what did we see, a tripling of world population, 1.6 at the beginning, 6.1 at the end. You don't have to write this down. It's very easy to remember. 1.6 at the beginning, and just the reverse 6.1 at the end. Rather remarkable.

We had the largest annual increase at the highest growth rate, shortest time to add a billion, most impressive improvements in mortality and longevity, unprecedented decline in fertility and enormous growth in cities, urbanization, that's the final points.

Now what can we say about the 21st century? Well, it seems that the world will be very different in the 21st century than it is today. How will it be different? First, it will be larger. There will be more people. Second, they will be substantially older, that we can be sure.

Third, more concentrated in developing countries. The shift from the population decidedly in the direction of the developing countries.

Fourth more urban. Consider this for the moment thirty five years ago, two third of the world was rural. Thirty five years ago, two out of three people lived as peasants in the rural area. Thirty five years from now, two third of the people will be living in urban areas. Enormous change in the shift will be seen in a few years. According to our projection, we are going to hit the historic period where fifty percent is rural, fifty percent is urban.

Fifth point is the final large difference between now and 2050. As I see it, the world will be more ethnically and culturally diverse than it is today. Greater diversity are not only because of migration but also because of globalization.

Finally, the third and final point is this, to deal effectively with the world of today and tomorrow. It's important to understand current and expected population trends. Knowledge, analysis, understanding is a pre-requisite. However, while knowledge and understanding are certainly necessary, they are not sufficient in my view. Ladies and gentlemen, what is needed in this coming century? Two things, bold vision and strong leadership. Bold vision and strong leadership are vital in order to ensure that the world in the 21st century is a much better place not only for just the fortunate few but for all the world.

Thank you very much for your kind attention this afternoon.

Questions and Answers

Mediator

We would like to get started with the question and answer section of the seminar. Dr. Chamie had reviewed the history of demography for the past 2000 years. And we had interesting stories, the sound effects were very good. We were able to hear “Puccini” opera, also the cries of a baby. So I think that this is quite a big contrast from what we have experienced from Dr. Conrad’s lecture.

Now there are demographers in the audience and also students. I’d like to give the opportunity to everybody to raise any kind of question in Japanese and in English and I hope you would introduce yourself and name of affiliation before you raise your question. So please raise your hand if you have any questions.

Q1

I belong to Institute of the Development Economy, JETRO.

I’m so impressed and very interested in your speech using the tape recorder. I have 2 questions.

First of all, when you talked about the HIV/AIDS epidemic, you said that the situation is deteriorating. However in Uganda HIV morbidity used to be very high in the past but as a result of an effort by the government and other parties concerned, I hear that the rates of incidences are coming down. Of course in other countries in Africa such as Botswana, there is a prevalence of HIV/AIDS. So until 2050, do you think the situation will further deteriorate and be getting worse? Or, do you think overall the situation concerning HIV and it’s epidemic would improve? That’s my first question.

My second question concerns the population especially the fertility increase of Bangladesh, India and Nigeria. In Bangladesh, the self sufficiency of women are being supported by the Bangladeshi Bank and it seems that family planning is going quite well compared to other South Asia like India. Bangladesh has a

lower rate of fertility, which is what I heard. Although in Sri Lanka the fertility rate has remained relatively constant for a long period of time, recently the fertility rate has come down, which is what I heard with regards to Bangladesh. But understanding the difference between 1998 and this years, revision is that the fertility rate had been modified upwards, so I think this is a contradiction to what I've heard.

What are the major reasons of the increase of fertility rate in Bangladesh? According to the population revision of the United Nations, the population estimate has been modified downwards for the past several years. By the year 2050, the world population was estimated to be about 10 billion. But constantly the population estimate was modified downwards. But I'm not really sure the specific reasons, that the populations estimate is 9.3 billion, including what I have raised as point right now.

Dr. Chamie, would you answer these questions?

Dr. Chamie

First we are speaking through languages. Possibility of misunderstanding is great even in dealing with people speaking in the same language, you have misunderstanding. I have a story for you. Misunderstandings can happen between professionals in the same office, same language, even in the same family. Let me tell you misunderstanding between my wife and me. O.K.?

Wife and I are at home, and we are talking, actually more than talking, we are having an argument, which is not uncommon among husband and wife. My wife said to me, "You don't listen, you don't understand what I'm telling you. And I told you that's your problem not mine. You don't listen to what I say." So we started this exchange, we end up arguing and said O.K. We went to separate rooms. So she sat down reading the paper. I went to the kitchen very upset and thinking I'm a scientist. I must prove that she has the problem not me. So I do an experiment, a social experiment with my wife. I'm about 20 meters behind her

and she is looking the other way, so I whisper very softly behind her “Can you hear me?” No response from the lady of the house. So I walked 10 meters closer, quietly I asked again, “Can you hear me?” Still no response from the love of my life. Finally I’m standing right behind her, where she is reading the paper still, and whisper, “Can you hear me now?” She turned around and looked at me and she said, “Yes, for the third time”. So it doesn’t matter if you are speaking to someone in the same language and very intimate. There is a chance for misrepresentation and misunderstanding, so please forgive me if I misrepresented some points during this lecture and answering your questions. You have 2 questions, one is on HIV/AIDS, and the other is on Bangladesh and the growth.

For HIV/AIDS short term worse, long term better, so it depends on your perspective. We have more countries experiencing HIV/AIDS.

In the short term, we do not know India, we do not know China and for that manner the black box about fertility or HIV/AIDS, is much bigger and much blacker. Where are they getting the data from? From surveys at pre-natal and post-natal data?

The data could be very unreliable because of the stigma with reporting HIV/AIDS. No one reports “Yes, I have AIDS.” They don’t report that. You have to take a blood test in order to check it. The estimates may be way off.

Second, about the situation in Uganda certainly, it appears from the data that it’s improved, but I’m, as a demographer, very suspicious until I see the data and see very clearly. It appears Uganda has improved because of political changes and social pressures and change in behavior. The change is very good.

According to the data, in other countries, the situation has gotten worse. In the early 80’s, they said a 12% maximum HIV prevalence, now it’s up to 24%. Now it’s up to 24%. They said that was about 20 years ago in the early 80’s. Now it’s up to 35% so in the short run we see a worsening but in the longer term we think the epidemic will go through some stages and there will be a change of behavior. People will change behavior and the incidence will go down after that has occurred

and the situation will go back to where the epidemic is not so bad.

But there are a lot of question marks. We don't know about China, India, even Russia, so the question is very difficult. Hopefully governments will show leadership and there is a special session of the general assemblies in June to discuss HIV/AIDS. And at that time, they are going to make some discussion. However, I'm very critical of that session because they haven't done the sufficient research to guide them. They said they wanted a conference on commitment. Commitment means money and statements of governments in order to spend money. You need research to understand where to spend money. With the money we can talk more effectively about AIDS.

To your second question, however, we upgraded our estimates of Bangladesh because we don't believe the survey is accurate. Because when you look at all the data the demographers have looked at, we think that the fertility is somewhat higher than what the survey indicates. We did that for a number of countries looking at it very carefully. Sometimes you have to make a choice about what survey you are looking at in order to make the past blend with the future or the present. And other times, you have a conflict with the structure and the fertility level. We had that with what Korea, the democratic republic North, North Korea. We had to choose to accept the age structure or the fertility level to make sense of that. So these countries, Bangladesh in particular, India went up slightly and Nigeria went up slightly. It has to do in making an evaluation of judgement on which date you are willing to accept, what confidence you have in these data.

We are not bound to accept National figure like some of the people in the statistics office in the United Nation. In fact we pride ourselves that we do not accept the data at face value. We always scrutinize and adjust and evaluate. That's what we are being paid to do. Thank you.

Q2

According to the international estimate of life span for the different nations, in

the case of Japan, 88 is the average life span for the Japanese in 2050. Presently it's a little over 80 in our research institute. We have a population research. We thought it would be 84. Is that correct? 84 in 2050? I don't remember the exact age but I thought it was about 84. We assumed that it would be 84 in 2050. 88 seems rather high. It's probably the highest in the world and I would like to know what was the reason of choosing this number 88?

Dr. Chamie

Thank you very much for your question.

It's a very good question. Why would we choose something that may differ from the national estimate? Let me see if I can answer it going around about. When we are doing mortality and fertility estimates for Europe, each European country, Germany, France, Italy, is trying to compete with each other who has the highest life expectancy. "We are doing much better than you. Better political system, better culture." So we should be better but we can't explain demographic trends in that context. We have to look for generally. The other criticism that we have is that sometimes we are too conservative with improvements in mortalities. Some people think that this predicted 88 is too low. We did not anticipate the fertility fall so fast as it has. In so many countries, our estimates in fertility and mortality are based on personal experiences of countries in the recent pass as well as what we anticipate, what the improvements in mortality will be in the coming year. I don't remember the thinking exactly in the case of Japan. But generally, we took so many years for improvement of every 5 year period revision. I think we were using something like one and half year to give in life expectancy. But that means we were extrapolating for Japan. We have other high life expectancy countries like Sweden and some of the Scandinavian countries. We also have the same feeling that there could be some medical break through that could extend life to these ages.

So, yes, we are optimistic but we have to have some scenarios that are likely to

be possible, all these new therapies, medical technology, medication and so on. In that way they are coming. In terms of fertility, we are not as optimistic for the recovery. Fertility is relatively low and not likely to increase, but in terms of life expectancy, we are fairly confident. This is likely to occur. We should continue to be optimistic about the reducing mortalities and increasing longevity. For example, according to this morning's paper, people, today at a certain age, are healthier than the same age 50 years ago. You are healthier now than your father was at your age. And your father was healthier than his grandfather. Generally, an example that I use has to do with running, the Olympics, at the end of the 19th century, the fastest man record was mixed by a man of 60 today. So because of the difference in same age in terms of time, not the same body at that age, we can expect more improvements, specially for women. Thank you.

Q3

I would like to, first of all, say I think that you are the eighth director for the population division and you are the liveliest and most humorist speaker of all the directors we have had. You have the eloquence and are very witty. Dr. Frank Nonstein was very serious person and so we are very happy to have a humorous person.

When Dr. Chamie told a joke, which he just mentioned, at the Santiago conference, I think he received a standing ovation from the audience. It was such a great joke, and today's talk was very interesting with the black box, the piggy bank and all the interesting props that Dr. Chamie used to enliven his talk. I thought he was going to do a magic show for us. I think it's too late for me to get a piggy bank. Now let's move on one serious note. Our major amazement this year 2000 projection are in the 2050 400 million people more than the previous projection and we find that we do not see any reduction in fertility in 16 nations. Also mortality rate, that is, longevity is also important factor. The mortality rate has dropped. It is also an important factor.

So now we find that fertility hasn't decreased as much as projected but according to figure 2 in "World Population Prospects The 2000 Revision", fertility in the developed nations, will increase and those in developing nations will decrease. I think, I asked the same question when Dr. Bongaarts was here. Will there be a convergence that is decline of fertility and increase of fertility? The fertility in the developed nations increase so that we can reach the demographers replacement level and the fertility in developing nations will decrease, so there will be a convergence.

Dr. Bongaarts, Dr. Youtsspin, also in the population division, said that once the developing nation proceed as they have in the past decade then their fertility rate will be 1.4 less. In the year 2500 then the human race will be extinct according to that scenario. So I do hope there will be a conversion, that is one point. My second point, I should not speak too long or not get too technical. But the second point is that aging population is considered on 60. In Japan we say that everyone over 65 is aged, that is the category used for statistic and so and so for 65 as the cutoff point. I really think that it should be 70. I think that 65 are still too young, in the developed nations. And so I think that 60 are far too young in developed nations. I think it should be 65 or 70 if possible. Third, with regard to mortality, every time this issue comes up, that longevity has increased.

With AIDS, for example, in the case of Japan, the official projection is lower than the projection. When we see world projection by the United Nations, the Japanese projection is slightly lower with regard to mortality. Well, since these are all uncertainties, perhaps we should not use a medium variant but a high/low in particular with the incidences with the insertion of the factor of AIDS in the former Soviet Union or in the Ukraine or the former Soviet states or the former Soviet bloc. This whole area is showing a gradual decline or stagnation. So we should have a variance that will take all into consideration and then we should have a high variant or a low variant, that is another point.

I would like to say in conclusion that Dr. Chamie's talk was extremely

interesting, encompassing and entertaining and I enjoyed it tremendously. Thank you.

Dr. Chamie

Thank you very much for those kind words.

Yes, I'm the seventh or so director for population division. My conclusion, as a student, which was reinforced by my children, if you are going to lecture, you must not be dull. You can be entertaining and through that mechanism, people will remember. People remember laughing and crying. They don't remember lectures too well. I don't choose to make people cry but I choose to make them laugh. When you laugh, you reduce your defenses, you relax, and you permit the information to come into you. And by doing so, you will remember it. When someone gives you a lecture and tells the growth rate is 1.2 and the Chinese population is 1.3 billion and Japan is 127 million and the United States is 283 million, too many numbers. The importance is not the detail. The message is the important thing when you leave here. I want you to remember 1 or 2 or 3 points. And I stress those over and over, that is, basically demography is birth, death and migration with two sexes over time, and those dynamics determine all of those things we are looking at. So I will bring a bit more humor to these 30 minutes.

O.K., now let me take the question that was asked in reverse order. Fertility is the most difficult and aging is somewhat difficult and mortality is first. Let's take mortality first, both questions are dealt with life expectancy. But as a scientist, you always run the risk of making an error. Different types of errors. In this case, mortality, life expectancy, what kind of error is less problematic, overestimation or underestimation about life expectancy? If you are going to choose between 88 or 84 for Japan, I would argue it's better to take the 88 for the future.

The longer the life expectancy is estimated, the more you prepare for future. So I would choose longer estimation. I've never heard anyone complain about making too much money. I've heard people complain they don't make enough

money. The stock market went down, I lost money, but no one walks down the street and says, "I'm so upset I made too much money today."

Similarly for life expectancy, you should, in my view, try to make as best you can based on your scientific but if you're going to make an error I would rather error on the side of maybe too high than too low.

Now, as to the variance, yes as a demographer, I agree with you. We need some variance. We increased by one, by having, what is called, the constant mortality variant. But that doesn't address what you want. What demographers want is different from what political leaders does. Demographers want more variance. Political leaders want fewer. I'm having difficulty selling three numbers as population. Because most political leaders say, "I want your best number one!" I remember starting off twenty-five years ago in the U.N. working in regional commission. My boss was Mr. Tabare and he got a call from the Prime ministers office, who was in Lebanon and they said, "We want to have an estimate about the population size of Beirut the capital." He came to me and says, "What's the size of Beirut?" I don't know, no one knows. He said, "They need a number and if you don't give it to them, somebody else is going to give them a number. And that person may not have as much knowledge as you." So we give them a number 1 so I said "It's between 1.1 to 1.3 million." "No, no, he wants one number," this responds to you perhaps. We can do some additional variants with mortality internally for demographers. But, for the political purposes, as you increase variance, its starts adding up geometrically different combinations. I agree with you and maybe we could explore that having some variance with different variance, with the improvement of mortality with regard to aging 60-65.

When I was in college as a demographer, we used to use 65. The United Nations uses 60. Why? Political decision, the world assemble on aging wanted 60, not 65, more voters if you bring it to 60, more people retire, more people get benefits, more people get a silver card. Whatever you want to call it, elderly person discount on train, discount on hotels. So this is politically motivated. We

wound up saying 60, also many developing countries not like Japan, like Niger. Somalia life expectancy is low, so if your elderly 65 or older 70, those people are very few in those countries, now next year in 2002 we have a world assembly on aging. This question will come up, personally, I think, 60 is too young for elderly, I think, 65 is not too elderly and as I approach those ages I find them too low. We should be higher. My own view is the elderly should be 80 and above for every developed countries. Many of my professors are still very active though they are 70 or 75. Why not having them work? And consider, the word young and the elderly might have different meaning in Japanese and in English. Young is good, active. Elderly old, problematic. It is used all the time. I have a young Toyota only a year old. I have an old Chevrolet 25 years old. So young and old of the idea have to change.

So the question should be the age limit. I agree with you. It should be high but we have constraints, U.N. member states who pay my salary, I'm in their organization, tells us we want it this way. Most of the demographers tell us it's too low 60, make it 65 or maybe 70. The governments are affected by trade unions and it affects pension, retirement ages and so on. Nobody wants to work anymore than they have to. Especially if they are not what's called "white collar", if the person is making steel or working as a brick layer, carpenter, people don't want to work to 70. They want to stop working as early as possible. So the age of retirement is basically critical economic issue.

The question on fertility is the most difficult one. It is the engine driving the whole entire train. What is going to happen with fertility is anyone's guess. Next week I will be organizing a session at the Population Association of America. The session I am organizing is on the future of fertility in the next 50 years. We don't know what's going to be happening. This low fertility of Japan around 1.3, 1.36 or 1.34, Italy 1.2, Russia 1.1, it's new for us. We have not seen this in the early 20th century, 19th century. It is new.

As to the projections for the developed world, we assume that the final fertility

rate will approach the complete co-existence of today. Final fertility rate is decided by those who were born in the 60's, 1960-65, so the total fertility of 1.8 for Germany, it will move towards 1.7. In the United States the total fertility rate is around 2. It will move back to that. That's the logic we are using. We are thinking there will be some recovery but we do not see it growing substantially above replacement.

Now you can argue there is adjustments, there's also things going on, but generally I think, you'll agree that the total fertility rate of the developed countries including Japan is not going to go above replacement and, it's going to be below. And that amount is a tipping point. If its 1.9 1.8 1.7, to me it's trend. To me it's below 2.0 or above 2.1. If it's below 2.1 at 2.0 1.9 1.8, its going down, If it's above 2.1, its going up. So there will be a convergence to a certain point, the fertility of every country is virtually going down not all but virtually going down. We've seen it. Who would have even thought Morocco, Tunisia, those countries in North Africa, basically Muslim will be approaching replacement level fertilities? You see country after country that is going down. The critics I see say that our division is too conservative. We are down faster say. In fact one of my professors when I was a student, Ronald Friedman was involved in the early 70's with China's fertility decline. He thought it was not possible for China's 1 billion to have it's fertility go down so fast. He said "we've never seen it, so I don't believe it." Then he returned from china and he came back while I was a student in those years, "I believe it." The countrie's population increase was coming down because of the fertility. Some of them are very high, which have an average number 6 to 8, are coming down to 2 and less. It is possible perhaps and the reason why I indicated are lower mortality, increased urbanization, higher education, female employment, lifestyles changes. All these interact to keep fertility down. And also, you have other factors such as pensions, if you want to increase fertility in Japan, get rid of your pension system. And then you are going to see your fertility going up. Who is going to take care of you when you get older? This is one

common sense, for example, in west Asia. In west Asia, these governments are not going to take care of you, when you get to be 60-65. Think you depend on your children to take care of you. The issue of convergence and fertility is the most precedent question and I personally spend the most time on that. What happened to fertility? What's likely to occur in the future? And I get the most criticism from the journalist, demographer, and people who don't know what to say. Most of the conservative demographers are saying it going to stay low and it's not going to change much. Some of the more optimistic ones are saying this is temporary. It's likely to go up if something changes as it did during the 30's and 1940's in the United States and Europe. You can have another baby boom. My personal view is to stay below replacement for the immediate future. And that's what I think where we are going to. Many forces keep fertility low.

I can ask your questions, for example, how many women have 5 children? 0, how many have 4? probably 0. The numbers are low because some women won't marry. If they marry, they don't have any children. Some choose to have 1, so simple arithmetic will put the average below 2 in my view. The real variable that determines which way it was going for Europe was basically the third child. In order to get the average above 2, you needed a third child and we don't see that is happening, so for the next 50 years. My best guess is it will stay below replacement but we will see other countries like Brazil or Tunisia are coming down.

Mediator

I think we have covered a lot of ground especially some technical one.

And I welcome any general questions or non-demographic questions from the audience.

Q4

My question is, well long ago more than 25 years ago, I had attended the Greece

human settlement symposium undertaken by Dr. Ciales. And Dr. Ciales, in those days, was very popular for scale of human settlement. And he suggested that scale, which made of what they call “equi-megapolis”. I cannot produce the static level of human being. I don’t know what century, however, in terms of these rather than population, he emphasized the entire physical quantity. It was limitation of food, environment and other things, which they call it a “humanapolis”. I forget the particular year when human population stabilize. But do you believe this fact-laden cost is very high in 2050. The simulation is just a calculation game. I don’t ask you what amount will become rich in human population or environment or physical quantity. What will become top ceiling in your opinion? I would like to know. Thank you very much.

Dr. Chamie

The question has to do with stabilize population when and how large the population will be when we stabilize. We have done long range projections. We have done this regularly, and we did one in 1998, I think. The one thing we can answer shortly is that, we will not see it doubling again. We will not see it going to 12 billion; we will see it less than 12 billion.

Our projections indicate that the birth and deaths somehow start balancing because as I say there are constraints. I assume everyone will die, we don’t assume immortality so give that every dies.

As for the second question on an upper ceiling, Yes, we have it. In our last projection it is between 10 and 11 billion. It has to do with fertility levels approaching a certain homeostatic level, an even level as Prof. Kohno was indicating fertility is the key variable. What some believe is the low, case because replacement and then population will start declining in the world in 100 and 150 years. But in our projection, we saw the population is between 10-11 variant. But sometimes it’s difficult to go out, to know where you are going. This number you make relates not to a demographer but to a physicist.

You are familiar with Prof. Einstein. He was a famous physicist at Princeton University and traveled a lot to give lectures like I do. And one day he got on the train to go somewhere. He was sitting on the train and the conductor came in and he asked tickets for all. Well Einstein, he looked in his jacket and he didn't find any ticket, and then he got up and looked for the ticket in the compartment above, took his overcoat down and looked through all the pockets. At that time the conductor was coming down towards him and Einstein starts getting nervous. He took his bag and put it on the floor and opened it. He started looking for the ticket. "Where is that ticket"? So he took out his shirts, his ties, his socks, and all of his underclothing out of the suitcase and onto the isle, looking for the ticket, he was making lots of noise and commotion. So the conductor looked down and wondered what was going on. And then he saw the cell. He realized this was the famous Professor. He walks toward him to calm him down. By this time, he has spread every piece of clothing on the floor, overcoat, and jacket looking for his ticket. So the conductor leaned over and said, "My dear Prof. Einstein, please calm down, I'm sure Princeton University will pay for the ticket." So Prof. Einstein looked up to him. Because he was on his knees, "My dear sir, I'm not concerned about the cost. I'm trying to figure where I'm supposed to be going."

We have the same problem. We are trying to figure out where we are supposed to be going and there are too many variables and the key variable is fertility. You don't know where we are going. We may have money to pay for the ticket in terms of the cost of income but it's not clear where we are exactly going.

Mediator

Well I had forgotten the time while we were listening to this interesting story.

I think we are running out of time. Are there any more question or comments in particular on aging and longevity?

I have a question of the issue.

I agree completely with what Dr. Chamie has said. I believe the aging problem in Japan cannot be solved by replacing age brackets. We have from 0-14, 15-64 and 65 and over so these are existing age brackets classification. I think we should have 0-19, 20-74, elderly over 75. This should be the new age classification and the difficult ratio. The dependency ratio should be calculated based on these new age classification and then up to the middle of the 20th century I think the dependency ratio will be about 30% lighter from the standpoint of the dependency ratio.

Policy will be easier to make, that is, because the previous classification of incorrect or in appropriate. I think that we can see a solution to the problem that will not be difficult in my opinion.

Dr. Chamie

Your comment, Prof. Kuroda, is coming perhaps from the oldest person in the room. Very refreshing to hear coming from the older generation. Personally I agree with you. And my children now are in the early 20's and I think even 19 is too young. We have to increase it to 25 to start paying for college. I don't think in many developed societies, especially for graduate training, that they are finished with being a dependent at age 19. I am personally with agreement with 15. It is too low and it has to be revised. My children are between 21 and 26 and still considered dependent financially and emotionally by me and my wife, Nevertheless, the age groups have to re- divided. I think 60-65 is far too young. And I would agree with 75. I was thinking of 80. Some people is still active in 75, especially for many women. Women tend to be more active over life than men are, because they live longer. They have better lifestyles and a more balanced approach to life, a more social network. Those of you in this room have a special responsibility you have to provide, as I said earlier, bold vision and strong leadership to the rest of the world. That is my assignment for you. Thank you.

Mediator

Thank you very much.

I would like to close off the meeting. I'm sorry, you may have had other questions, but now we have to close the meeting. And today we had an intriguing and entertaining story from Dr. Chamie. Not only numbers and facts but also very interesting messages have been conveyed. And I think all the attendants may have opportunities to have such a nice lecture. I hope you have learned a lot in this occasion.

Thank you very much. Once again a big hand to Dr. Chamie and also would like to thank the interpreters of their contribution. Thank you.