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FAO ANIMAL PRODUCTION AND HEALTH



working paper

MAPPING SUPPLY AND DEMAND FOR ANIMAL-SOURCE FOODS TO 2030

Pro-Poor Livestock Policy Initiative
A Living from Livestock

FAO FIAT PANIS

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FAO ANIMAL PRODUCTION AND HEALTH
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MAPPING SUPPLY AND DEMAND FOR ANIMAL-SOURCE FOODS TO 2030

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Preface

Around 2.6 billion people in the developing world are estimated to have to make a living on less than $2 a day and of these, about 1.4 billion are 'extremely' poor; surviving on less than $1.25 a day. Nearly three quarters of the extremely poor – that is around 1 billion people – live in rural areas and, despite growing urbanization, more than half of the 'dollar-poor' will reside in rural areas until about 2035. Most rural households depend on agriculture as part of their livelihood and livestock commonly form an integral part of their production system. On the other hand, to a large extent driven by increasing per capita incomes, the livestock sector has become one of the fastest developing agricultural sub-sectors, exerting substantial pressure on natural resources as well as on traditional production (and marketing) practices.

In the face of these opposing forces, guiding livestock sector development on a pathway that balances the interests of low and high income households and regions as well as the interest of current and future generations poses a tremendous challenge to policymakers and development practioners. Furthermore, technologies are rapidly changing while at the same time countries are engaging in institutional 'experiments' through planned and un-planned restructuring of their livestock and related industries, making it difficult for anyone to keep abreast with current realities.

This 'Working Paper' Series pulls together into a single series different strands of work on the wide range of topics covered by the Animal Production and Health Division with the aim of providing 'fresh' information on developments in various regions of the globe, some of which is hoped may contribute to foster sustainable and equitable livestock sector development.

In 2006 the FAO Global Perspective Studies Unit revised their estimates of prospective developments in food demand and consumption to 2030/2050 (FAO, 2006b). In this paper we take the estimates of supply and demand for animal-source foods and disaggregate them spatially for the years 2000 and 2030. By so doing we are able to present detailed maps and tables of change in supply and demand that are of direct use to researchers and decision makers in the livestock sector.

Abbreviations

AGAL	FAO Livestock Information, Sector Analysis and Policy Branch
CAST	Council For Agricultural Science And Technology
CIAT	Centro Internacional de Agricultura Tropical
CIESIN	Center for International Earth Science Information Network
ESRI	Environmental Systems Research Institute (Redlands, California)
FAO	Food and Agriculture Organisation
FCR	Feed conversion ratios
GAUL	Global Administrative Unit Layers
GDP	Gross Domestic Product
GHG	Greenhouse Gas
GIS	Geographic Information System
GLIMS	Global Livestock Impact Mapping System
GLW	Gridded Livestock of the World
GPW	Gridded Population of the World
GRUMP	Global Rural and Urban Mapping Project
HPAI	Highly Pathogenic Avian Influenza
IMF	International Monetary Fund
LDPS-2	Livestock Development Planning System Version 2
LGP	Length of Growing Period
NRC	National Research Council
ORNL	Oak Ridge National Laboratory
SUA	Supply Utilisation Accounts
UN	United Nations

Executive summary

Livestock is one of the fastest-growing sectors in agriculture, potentially presenting opportunities for economic growth and poverty reduction in rural areas, though unless carefully managed the main social effects may be negative – if the livestock-dependent poor are squeezed out of markets and are presented with few viable livelihood alternatives. There may be other negative outcomes to sector growth. A matter for recent concern has been the contribution that livestock make to greenhouse gas (GHG) emissions, for example, and there are public health implications of livestock production: the rapid spread of infectious diseases, typified by the recent and ongoing H5N1 avian influenza panzootic and the pandemic (H1N1) influenza A crisis, demonstrates the magnitude of problems arising from the emergence of novel diseases at the animal-human-ecosystems interface. Dealing with these important social, environmental and public health issues will require solutions that embrace the way in which the livestock sector grows to meet the increasing demand.

Given these important externalities to rapid livestock sector growth, it is important to understand where growth in demand for livestock commodities is likely to occur, and how and where production of livestock commodities will be increased in order to meet it.

Estimates of supply and demand for animal-source foods, provided by the Global Perspective Studies Unit at FAO, have been disaggregated spatially for the years 2000 and 2030. Demand for animal-source foods was mapped by estimating per-capita consumption and applying this to mapped population distributions in 2000. Population maps were produced for 2030 based on projected population growth and urbanisation rates and future estimates of per-capita demand applied to these. Similarly, livestock production maps were produced by spatially disaggregating the estimated production based on maps of the relevant livestock species. This has resulted in detailed maps and tables of change in supply and demand from 2000 to 2030 that are freely available to be downloaded from the Gridded Livestock of the World website (www.fao.org/ag/againfo/resources/en/glw/home.html).

The disaggregation of demand growth in this way allows distinctions to be made a) between growth arising from population growth, as compared to that arising from changing consumption patterns, and b) between urban and rural growth, with urban growth being explicitly linked to the major urban centres.

The results show that by far the most dramatic change is the projected increase in demand for poultry meat in South Asia; a 725 percent increase overall. This is driven by growth in demand in India where a staggering 850 percent increase is projected over the 30 year period (from 1.05 to 9.92 million tonnes, annually). They also show that the vast majority of growth in most areas is caused by increasing per capita consumption rates rather than by increasing population levels. In India, for example if consumption rates of poultry meat remained constant to 2030 only 5 percent of the projected growth would occur; whilst, even if the population size remained static 69 percent of the demand growth would still occur, driven by changing food consumption patterns. The results also highlight the importance of urbanisation in growth patterns; taking again the example of poultry meat in India, the relative increase in demand from the urban areas from 2000 to 2030 is 1 277 percent, almost twice that in the rural areas (677 percent).

The implications of these patterns of growth in demand for animal-source foods lie in structural changes to the livestock sector: there will need to be a rapid intensification of production in some areas accompanied by value chain development linking production zones with consumption centres. The maps of demand growth presented here can help identify where intensification of production is likely to occur in the coming decades.

Whilst the methodology can be improved in numerous ways, most importantly in linking production explicitly to production systems, the resulting maps and databases can be of direct use to researchers and decision makers in the livestock sector; through analysis of the social, environmental and animal and public health impacts of rapid growth and intensification in livestock production.

Introduction

The recently published flagship publication of the Food and Agriculture Organisation (FAO): '*Livestock in the balance*' (FAO, 2010a) points to continuing growth of the livestock sector, stating that: '*Decisive action is required if increasing demand is to be met in ways that are environmentally sustainable and contribute to poverty alleviation and improved human health*'.

Driven by population growth and increasing incomes, the demand for animal-source foods in developing countries is growing rapidly, while urbanisation leads to demand becoming highly concentrated. Up to a point of saturation, a more affluent population uses a proportional, or even increasing proportion of its growing income on animal-source foods. Economists describe this in terms of income elasticity. In China, for example, income elasticity for meat is about 1 percent and that for milk is about 1.2 percent. This means that for every percentage point increase in income, expenditure on meat and milk will increase by 1 and 1.2 percent, respectively (World Bank, 2005).

Livestock is one of the fastest-growing sectors in agriculture, presenting potential opportunities for economic growth and poverty reduction in rural areas. Current estimates (Robinson *et al.*, in press) are that 766 million poor people (< US$ 2 per day) keep livestock. Livestock sector growth could directly benefit these, and others who are less immediately linked to the livestock sector. The social and economic benefits of this increase in demand include the sector's potential contribution to economic growth, especially in economies where agriculture contributes significantly to Gross Domestic Product (GDP), possibly creating market opportunities for the livestock-dependent poor, and improvements in food security and nutrition.

But positive social outcomes of sector growth may not be ubiquitous. There is also a risk that smallholders dependent on livestock for their livelihoods may be squeezed out of the sector as production intensifies and becomes geographically concentrated. Beyond possible social problems are environmental and public health issues that are likely to be associated with rapid, poorly regulated sector growth. There has been considerable debate of late about the contribution that livestock make to greenhouse gas (GHG) emissions. Published estimates range from 18 percent of annual worldwide GHG emissions (FAO, 2006a) to 51 percent (Goodland and Anhang, 2009). These estimates include the effect of deforestation and other negative land use changes that can arise as a result of increasing livestock production. Other negative environmental effects include land degradation (e.g. from overgrazing), loss of biodiversity and pollution from effluents (FAO, 2006a).

Regularly making the news headlines are some of the public health consequences of rapidly increasing livestock production. The spread of infectious zoonotic and non-zoonotic diseases, typified by the recent and ongoing H5N1 avian influenza panzootic and the pandemic (H1N1) influenza A crisis, demonstrates the magnitude of such problems. Dealing with the staggering human and animal disease burden that persists in the developing world and the continual emergence of novel diseases at the animal-human-ecosystems interface require solutions that embrace the way in which the livestock sector grows to meet increasing demand.

Understanding where growth in demand for specific livestock commodities is likely to occur, and where production will rise to meet this increasing demand, are

therefore important for a number of reasons.

In 2003 the Global Perspective Studies Unit of the Food and Agriculture Organisation (FAO) published the report '*World Agriculture: Towards 2015/2030*' (Bruinsma, 2003). The study presented prospective developments in food demand and consumption and possible implications for nutrition and under-nourishment. Since the publication of that study, estimates of population growth have been revised considerably and the world energy markets have become increasingly tight. High energy prices affect the food and agriculture sectors in many ways, with, for example, direct increases in the costs of inputs and of transporting agricultural products, and the more complex interactions that result from an increased use of agricultural land to produce biofuels. For these and other reasons FAO has revised and extended the 2015/2030 estimates to 2030/2050 (FAO, 2006b).

These new estimates present the possibility of mapping changing demand for livestock products, and possibly the associated changes in production that will be required to meet that demand growth.

In this paper we first provide an overview of demographic and economic changes in the world that are influencing the livestock sector. The following section describes the methodological approaches to mapping human and livestock populations, provides a summary of how the FAO projections are made (focussing on livestock commodities), and describes how these can be combined to map projected demand for and supply of livestock commodities. The results section presents some examples of the outputs of the analysis and the concluding section mentions some ways in which the methodology might further be developed in the future, and discusses some implications and potential uses of the results.

Detailed maps and tables of projected change in supply and demand for animal-source food, disaggregated in a number of ways, are provided in the Annexes.

Since the late 1970s, increasing population, growth in per-capita GDP and urbanization have combined to boost demand for animal-source foods in developing countries – a phenomenon that has been termed the 'livestock revolution' (Delgado *et al.*, 1999). With livestock contributing to the livelihoods of some 42 percent of the world's poor (Thornton *et al.*, 2002), this growth in demand has been widely attributed considerable potential for poverty reduction.

Delgado *et al.* (1999) described the transformation in demand for animal-source foods that occurred in the 1980s and early 1990s. They reported that during this period, the total amount of meat consumed in developing countries grew at three times the rate of that in the developed countries, and they predicted this growth to continue at a rate of 2.8 percent for meat and at 3.3 percent for milk in the developing countries up to 2020. During the past 10 years, much of the forecast increase in demand has occurred, but in a rather patchy manner. China and Brazil in particular have witnessed massive increases in demand for and production of livestock products, but sub-Saharan Africa has for the most part been virtually stagnant, with the possible exceptions of milk in Kenya and poultry in South Africa. It would appear that economic growth must accompany population growth if the 'revolution' is to occur.

WORLD POPULATION PROJECTIONS

The population of the world was estimated at 6.8 billion in 2009, with 5.6 billion (or 82 per cent of the world's total) living in the less developed regions (UN, 2009). Current estimates are that the population will grow to 9.1 billion in 2050, with most of the growth occurring in developing countries (UN, 2009).

According to the United Nations (UN) long-term projections, the world population will reach its peak in 2075, at 9.2 billion, then decline slightly and increase again to reach a second peak of 9 billion by 2300 (UN, 2004). To project future population the UN Population Division makes assumptions regarding future trends in fertility, mortality and international migration. This pattern of rise, decline, and rise again results from these assumptions on vital rates: that, country by country, fertility will fall below replacement level and eventually return to replacement; and that, country by country, life expectancy will eventually follow a path of uninterrupted but slowing increase.

However, with alternative, plausible assumptions about fertility, long-range trends could be quite different, so a number of projection variants is produced, to deal with uncertainties of making projections into the future. For example, with long-range total fertility of 0.3 children above replacement, projected world population in 2300 is four times as large as the main projection; with total fertility of 0.2 children below replacement, world population in 2300 is one-quarter of the main projection (UN, 2004).

The projected population trends also depend on sustained progress in HIV/AIDS prevention and treatment. Although a growing number of the countries that are most affected by the epidemic is reaching and maintaining lower prevalence levels, in countries where the prevalence has been high the impact of the epidemic is still evident and, in these countries, the growth rate is expected to continue declining.

Based on these assumptions, the UN estimates that the populations of 30 countries, most of which are categorised as least developed, will at least double between 2010 and 2050, according to the medium variant. In contrast, the population of the more developed regions is expected to change minimally, passing from 1.23 billion to 1.28 billion, and would actually decline to 1.15 billion were it not for the projected net migration from developing to developed countries (UN, 2004).

An important issue in population growth is the distribution and the growth of urban areas. According the 2007 *World Urbanization Prospect,* the population living in urban areas is projected to rise from 3.3 billion in 2007 to 6.4 billion 2050. Globally, the level of urbanization is thus expected to rise from 50 percent in 2008 to 70 percent in 2050 (UN, 2008).

There is considerable diversity in the levels of urbanization in different regions. While 74 percent of the inhabitants of more developed regions lived in urban areas in 2007, just 44 percent of those in the less developed regions did so. Urbanization is expected to continue rising in both the more developed and the less developed regions so that, by 2050, urban dwellers will account for 86 percent of the population in the more developed regions and for 67 percent in the less developed regions (UN, 2008). Among the less developed regions, Latin America and the Caribbean have exceptionally high levels of urbanization (78 percent), while Africa and Asia retain larger shares of rural inhabitants. Over the coming decades, however, the level of urbanization is expected to increase in all major areas of the developing world, with Africa and Asia urbanising more rapidly than the rest.

Furthermore, the urban population is distributed unevenly among urban settlements of different size. Despite their visibility and dynamism, mega-cities (defined as a metropolis with a population greater than 10 millions) account for a small proportion of the world's urban population: about 9 percent in 2007. This proportion is expected to rise to almost 10 percent in 2025. Mega-cities account today for only 4 percent of the global population. In contrast, over half of the urban population lives and will continue to live in small urban centres, with fewer than half a million inhabitants (UN, 2008).

WORLD INCOME PROJECTIONS

Forecasting national incomes, in terms of GDP, presents even more challenges than projecting population, given the uncertainties and instabilities of markets and financial systems. The International Monetary Fund (IMF) regularly produces short-term future estimates of GDP and economic growth. Global growth, for example, is projected to reach 3.1 percent in 2010, following a contraction in activity of 1.1 percent in 2009. By 2014, global growth is forecast to have reached 4.5 percent (IMF, 2009).

The World Bank also regularly produces future estimates of national GDP and per-capita GDP over a 5-year period, along with poverty forecasts. For example, per-capita GDP in developing countries over the period from 2010 to 2015 is expected to expand at a relatively rapid annual pace of 4.6 percent, much faster than the 2.1 percent pace of the 1990s (World Bank, 2009). Producing robust forecasts of GDP and economic growth more than about 5 years into the future is challenging, however, due to the vagaries of markets and financial systems.

Notwithstanding these difficulties the World Bank has produced some medium-

to long-term projections of GDP. At assumed growth rates in per-capita GDP of 2 percent in high income countries (which is the average over the past 20 years) and 3.3 percent in low- and middle-income countries (an optimistic figure, representing the growth experienced in the 1960s and 1970s), world income in 2050 would be more than US$ 135 trillion, up from US$ 35 trillion today (World Bank, 2006b). At these rates, the total GDP in 2050 of today's developing countries will be twice that of industrial countries today. Whilst expected GDP growth in the developing regions may sound promising in terms of meeting basic human needs for food and shelter, poverty could still increase significantly in a number of developing economies; notably in sub-Saharan Africa, where per-capita GDP contracted in 2009 for the first time in a decade (IMF, 2009).

THE LIVESTOCK SECTOR

Overall growth in agricultural production is slowing down, and is expected to continue to do so as a consequence of the slowdown in population growth, in spite of the fact that levels of food consumption are likely to increase. Notwithstanding a slowing in the growth rate of the population, agricultural production will need to increase by 70 percent (nearly 100 percent in developing countries) by 2050 to cope with a 40 percent increase in world population and to raise average food consumption to 3 130[1] kcal per person per day. Bruinsma (2009) provides some estimates of the additional crop and livestock production that would be needed to meet this increase in demand for food; an additional billion tonnes of cereals, for example, and 200 million tonnes of meat would need to be produced annually by 2050, as compared with production in 2005/07.

For the livestock sector, this raises important questions: Where will that meat be consumed? Where and how will it be produced? What will be the economic, social, environmental and public health outcomes of that increased production?

Whilst overall production must increase to meet the increasing demand it is projected that there will be a deceleration in growth of meat production and consumption, though the milk sector is expected to continue to grow, mainly because of growth in demand in developing countries (FAO, 2006b). Meat consumption in China grew massively from an annual average of 9 kg per person to more than 50 kg per person in the space of 30 years. Consumption in the rest of the developing world, which now averages a modest 16 kg per person, still has considerable potential for growth, considering that per-capita consumption could easily double by 2050.

In developing countries, where most of the global growth in population occurs, meat consumption has grown at over 5 percent per annum during recent decades, and milk consumption at nearly 4 percent per annum – but these impressive growth figures have been driven largely by China and to some extent Brazil. FAO (2006b) reported the average meat consumption in industrial countries to be around 90 kg per person per year (in 2000); 26 developing countries had an average consumption rate under 10 kg, and a further 30 had average consumption rates of between 10 and 20 kg. Of these 56 countries, 23 consumed less meat per capita on average than they had 10 years before.

[1] 2 200 kcal per person per day is considered to be the minimum required food energy intake (SPHERE, 2004).

If the consumption figures for China are removed from the equation, the growth rate for world meat consumption of 2.9 percent per annum seen in the 1990s is halved. The livestock revolution described by Delgado *et al.* (1999) is not a ubiquitous phenomenon, largely because of the much slower development and income growth in many countries. On top of that, growth in meat consumption is and will continue to be moderated by cultural factors in some very large developing economies – for example the consumption of beef in India and pork in Muslim countries.

By far the largest proportion of livestock sector growth in recent years is attributable to the poultry sector, which has consistently grown at more than 5 percent per annum since the 1960s. Its share in world meat production doubled from 15 percent thirty years ago to 30 percent in 2000. Growth and an increased share in overall meat consumption have also been seen in pork, but ruminant meat consumption has actually been on the decline. Further details of the more recent trends in consumption and production of animal-source foods can be found in numerous publications: FAO (2008), Bruinsma (2009) and Rae and Nayga (2010), to name a few.

The Global Perspective Studies Unit at FAO has an on-going programme to estimate current demand for and production of agricultural commodities, and to project these into the future (Bruinsma, 2003; FAO, 2006b). In the next section we summarise how this is done and describe a methodology to map these estimates and projections.

Methods

The approach taken here to map consumption of livestock commodities essentially involves taking the FAO estimates of consumption and mapping these, based on the distribution of people. The analysis is constrained by the level of disaggregation of the available data; which provides average consumption rates of livestock products for each country. In reality we know that consumption rates for livestock commodities tend to be higher in the more affluent urban areas and amongst the wealthier sectors of society in general. Production of livestock commodities can be mapped in a similar way – disaggregating estimated production based on the distributions of the relevant livestock species.

Below, we describe the data and methods used to map changing demand and supply of livestock commodities.

HUMAN POPULATION DISTRIBUTION

There are various estimates of current and future populations. The most widely used come from the UN *World Population Prospects* (*e.g.* UN, 2009) and *World Urbanisation Prospects* (*e.g.* UN, 2008). These data include total population numbers and the proportion of the population living in urban areas now and in the future.

Whilst the UN figures provide national totals there have been various projects to disaggregate population data globally, the most important of which are the Landscan project (ORNL, 2008), the Gridded Population of the World (GPW) (CIESIN and CIAT, 2005) and the Global Rural and Urban Mapping Project (GRUMP) (CIESIN et al., 2004).

Landscan provides the most up-to date, gridded (i.e. presented in geographic information system (GIS) format as a raster layer), worldwide population database and its population values are the result of a model that apportions census counts (at sub-national level) to each cell of a 30 arc-second grid (about 1 km at the equator) according to likelihood coefficients. These coefficients are based on proximity to roads, slope, land cover, night-time lights, and other information. The database is updated annually by incorporating new spatial data and remotely sensed imagery, and the distribution algorithms are revised accordingly. Comparing different versions of the dataset, cell by cell over time, therefore, may result in misleading conclusions, and thus the data should not be used to infer change, for example as a result of migration (ORNL, 2008).

GPW and GRUMP gridded data are derived from a simple proportional allocation gridding algorithm of national and sub-national level population data from as close as possible to the time of the estimate. GPW data are available at a resolution of 2.5 arc-minutes (about 5 km at the equator) for the years 1990, 1995 and 2000.

GRUMP has been developed to allow analysis of urban and rural population figures based on a consistent global dataset. It does not provide future population estimates, but it distinguishes urban and rural population taken from around the year 2000, and also provides a map of urban extents, which was derived largely from the night-time lights (Elvidge *et al.*, 1997). GRUMP is available at the finer spatial resolution of 30 arc-seconds (about 1 km at the equator). Details on the methodology and data sources are provided in Balk *et al.* (2004).

Whilst future projections of national totals and rates of urbanisation of human populations are readily available, there have been few attempts to map future human population distributions. One project implemented by the Center for International Earth Science Information Network (CIESIN) and FAO provides projected populations to 2015 but no further (CIESIN *et al.*, 2005)

LIVESTOCK DISTRIBUTION

FAO has an ongoing programme to collate and disseminate sub-national livestock statistics for the globe: the Global Livestock Impact Mapping System (GLIMS) (Franceschini *et al.*, 2009). Sub-national livestock statistics are collected from a variety of sources and geo-registered to digital administrative area boundaries, standardised to the Global Administrative Unit Layers (GAUL)[2] system where possible. One of the products derived from GLIMS is the Gridded Livestock of the World (GLW)[3] (Robinson *et al*. 2007; FAO 2007a), which provides modelled distribution data in ESRI grid format for cattle, buffalo, sheep, goats, pigs, chickens and other poultry. The map values are animal densities per square kilometre, at a resolution currently of 3 arc-minutes (approximately 5 km at the equator) with work in progress to upgrade this to a 1 km product (30 arc-seconds). These maps are updated regularly using the method summarised below (and described in detail in FAO, 2007a).

Firstly the best available sub-national data on livestock populations, at a range of spatial resolutions depending on availability, are collected and standardised. These are converted to densities, at the same time adjusting to account for the area of land deemed suitable for livestock production, for example where satellite-derived vegetation indices indicate there to be insufficient grazing (for ruminant species); where other features of land-cover, such as elevation and slope would preclude livestock development; and where prevailing land-use would not permit livestock to occur, such as in urban and protected areas.

The resulting suitability-adjusted livestock densities are then used to establish robust statistical relationships between livestock densities and an extensive suite of predictor variables, summarised in Table 1. Details and references to the data sources are provided in Robinson *et al.* (2007) and FAO (2007a).

Since the predictors of animal densities are unlikely to be consistent from region to region, or across different agro-ecological zones, models are developed separately for different regions and for different ecological zones defined empirically by clustering (unsupervised classification) of remotely sensed climatic variables. A series of stepwise multiple regression analyses is performed between the livestock densities and the predictor variables and the best-fitting equations are then applied back to the images of predictor variables to generate a map of modelled density for each species. To avoid spurious predictions, the modelled total numbers for each administrative unit are adjusted to equal those reported for a given administrative unit. Further products are then generated, adjusting the modelled data so that national totals match FAO's official national statistics for the years 2000 and 2005, providing time-standardised datasets.

[2] The Global Administrative Unit Layer (GAUL): http://www.fao.org/geonetwork/srv/en/metadata.show?id=12691&currTab=simple

[3] The Gridded Livestock of the World (GLW): www.fao.org/ag/againfo/resources/en/glw/home.html

Table 1. Generic list of variables used in livestock distribution modelling.

Generic type	Variables
Locational	Longitude, latitude
Anthropogenic	Distance to roads Distance to city lights
Demographic	Human population
Topographic	Elevation
Land cover	Normalised difference vegetation index (NDVI)
Temperature	Land surface temperature Air temperature Middle-infrared
Water and moisture	Vapour pressure deficit Distance to rivers Cold cloud duration Potential evapotranspiration
General climatic	Modelled length of growing period
Other	Tsetse distribution (for Africa)

Source: adapted from Robinson *et al.* (2007).

Following from livestock distribution maps, attempts have been made in some parts of the world to map production of various livestock commodities. Livestock production and off-take rates vary across different agro-ecological zones and livestock production systems, and in a broadly predictable way. Thus models for livestock growth and off-take can be applied to the livestock distribution maps – parameterised differentially for different zones or systems. For example, beef and milk production and use of draught power in sub-Saharan Africa have been estimated by deriving annual output per head of cattle within each of seven major agro-ecological zones (FAO, 2002a and FAO, 2002b). These zones were defined and mapped by combining a number of spatial variables (temperature, elevation, Length of Growing Period (LGP) and crop type) in a decision tree. Livestock production was modelled for each zone using the herd growth model within the Livestock Development Planning System Version 2 (LDPS-2) (FAO, 1997). The herd models were parameterised separately for each zone, based on available published data (for some parameters, data were sparse). More recently meat and milk off-take maps were re-evaluated for Africa using the updated GLW cattle distributions (Robinson *et al.,* 2007) and the Thornton *et al.* (2002) livestock production systems to stratify production modelling (FAO, 2007a).

A number of attempts has been made to map future livestock populations. Herrero *et al.* (2008), for example estimated the distribution of African ruminant livestock in 2030 based on FAOSTAT trends applied to the GLW livestock distributions. A more sophisticated approach takes the outputs from global agricultural sector models and makes the conversion from tonnes of livestock products back to spatial distributions of livestock, again based on GLW (Rosegrant *et al.*, 2009). Both of these approaches involve pro-rata adjustments to current estimates, based on GLW. A logical next level of sophistication would be to apply differential growth rates for different livestock production systems. Such an approach has been taken for cattle in West Africa (Shaw *et al.,* 2006) and, more recently, in East Africa (FAO, *in press*; Wint *et al.* 2011) with the specific purpose of mapping the benefits of dis-

ease control – trypanosomosis in this instance – over a 20 year period. In these examples cattle herd models have been differentially parameterised for each of a series of cattle production systems and the populations grown accordingly. An estimate of maximum stocking rate, based on climate and human population is further employed to decide when cattle need to migrate away from an area of growth. Such approaches, whilst almost certainly the way forward with the larger, slower growing species of livestock, are not really applicable to the monogastric species with their much higher turnover rates.

PROJECTED PRODUCTION AND CONSUMPTION OF LIVESTOCK COMMODITIES

The methodology used for producing the FAO projections, summarised below, is described in detail in Alexandratos (1995), who stresses the importance of noting that the resulting projections are not 'trend extrapolations', but rather are based on expectations of the future. The overall approach is to estimate the food balance sheets for a base year, driven primarily by estimates of current production levels, and then to project demand for each commodity using Engel demand functions and exogenous assumptions of population and GDP growth. Provisional production targets are derived for each commodity and country based on rules about future levels of self-sufficiency and trade. Specialists in each country and discipline are engaged and the production targets are revised during several rounds of iterations and adjustments based what are considered to be feasible and realistic levels of land use, production intensity, yields and trade.

For the livestock sector a formal 'flex-price model' is used (FAO, 1993) to provide starting levels for the iterations and to keep track of the implications, for all variables, of the changes in any one variable introduced in successive rounds. Again, the results of the model projections are scrutinised at each iteration by specialists, particularly with respect to realistic levels of production growth and trade.

The livestock commodities included in the FAO projections are listed in Table 2 and the countries and country groupings for which FAO projections are available are given in Annex A.

Base year data preparation

First a base year is selected, and represented using a 3 year average centred on that year. For each commodity and country production, demand and net trade balances are estimated. For the demand-supply analysis the Supply Utilisation Accounts (SUAs) framework is adopted, which is structured as follows:

Food (direct) + Industrial non-food uses + Feed + Seed + Waste (+ Discrepancy)

= Demand (total domestic use)

= Production + (Imports - Exports) + (Opening stocks - Closing stocks)

For the base year the SUAs are driven by production estimates. Net trade, feed, seed, waste and industrial use are estimated for each commodity and the food avail-

Table 2. Livestock commodities included in the FAO projections

Commodity groupings
Beef, veal and buffalo meat
Mutton, lamb and goat meat
Pig meat
Poultry meat
Milk and dairy products (whole milk equivalent)
Eggs

Source: Alexandratos (1995)

able for direct human consumption is the residual. For the most recent estimates that are currently available (FAO, 2006b) the base year SUA was constructed using FAOSTAT data from 1999, 2000 and 2001 on crop and livestock commodities where possible, but adjusted by the authors where other sources of data provided more reliable estimates.

A major component of data preparation is the task of unravelling the SUA element *production* for the base year into its constituent components. The rather complex procedure is described in detail in Alexandratos (1995) but, put simply, crop production requires the areas, cropping intensities and yields to be estimated, and livestock production requires the total stock, off-take rates and carcass weights (or yields per animal in the case of milk and eggs) to be estimated.

$$Production\ (crops) = Area\ planted \times Cropping\ intensity \times Yield$$

$$Production\ (meat) = Number\ of\ animals \times Off\text{-}take\ rate \times Carcass\ weight$$

$$Production\ (milk\ and\ eggs) = Number\ of\ animals \times Yield$$

Projections of human population and GDP

The most recent estimates of human population and GDP now and in the future are described above but the currently available FAO projections are based on earlier versions of these. Whilst the newer figures are being incorporated into the FAO projections these were not available when this paper was written.

Population figures used in the FAO projections were taken from the medium variant UN *World Population Prospects* 2002 revision (UN, 2003). Those estimates projected the world population to grow from the 2000 level of 6.07 billion to 8.13 billion in 2030 and 8.92 billion in 2050. These do vary from the most recent medium variant revisions, which are less conservative: 8.31 billion in 2030 and 9.15 billion in 2050 (UN, 2009).

Estimates of economic performance were based largely on the World Bank's *Global Economic Prospects, 2006* (World Bank, 2006a), which provide economic growth (per-capita GDP) projections for the period from 2001 to 2015. These projections and extensions to 2030 '*... provided the basis for defining the GDP projections used as exogenous assumptions in the present study. Projections for the period 2030-50 were formulated by the authors of this study, largely on the assumption of continuation of the growth of the period to 2030, but with some important exceptions*.'. These exceptions are listed in FAO (2006b).

Projecting supply and demand for livestock commodities

Whilst it may seem more logical to separate the discussion on projecting demand from that on projecting supply, the two sides of the equation are intimately linked so are discussed together. The FAO projections involve three broad steps: a) drawing up SUAs, by commodity and country, for the years to be projected, in this case 2030 and 2050[4]; b) unravelling the projected production into its component elements; and c) drawing up land use balances.

The SUA projections for livestock commodities (as well as those for cereals and oil-crops) are derived using a flex-price model (FAO, 1993). This provides year-by-year world price equilibrium solutions for the commodities covered, it has demand (for food, feed, other uses) and supply (area, yields, animal numbers, etc.) equations for each country, and each country's solution is influenced by those for every other country through imports and exports, which are equated at the world level by price changes. (For some other commodities, such as sugar, rubber, cotton and jute, single commodity models are used to generate the initial projections.) For all commodities parallel projections are prepared for each SUA element, as described in Alexandratos (1995). In the livestock sector, for meat commodities the *food* element is by far the most important as very little of overall production is assigned to the other elements of the demand side (*industrial non-food uses, feed and waste – seed* is not relevant in this case). For milk products, however, there are significant amounts of total demand assigned to the elements of *feed* and *waste* and, with eggs, some of the demand is assigned to *waste* and a proportion to the *seed* element.

The *food* element (more correctly termed 'food available for direct human consumption') is projected in per-capita terms using the base year data, a set of estimated food demand functions (Engel curves) for up to 52 separate commodities in each country, and assumptions about the growth of per-capita GDP. The results are reviewed by commodity and nutrition specialists and adjusted taking into account any relevant knowledge and information; in particular the historical evolution of per-capita demand and the nutritional patterns in each country. The total projected food demand is then obtained by multiplying the projected per-capita levels with projected population.

MAPPING CHANGING CONSUMPTION OF LIVESTOCK COMMODITIES

The first stage in mapping consumption of livestock commodities involves mapping the human population now and in the future. For the base year (2000) the GRUMP population map was used but was adjusted so that national totals matched those used by the FAO projections, which themselves were based on those reported in UN (2003). For the 2030 and 2050 projections the adjusted GRUMP 2000 maps were used, and the base year population figures were multiplied by 'growth' factors, so that the total number of people in each country matched the FAO projected figures. Urban and rural population totals for 2000, 2030 and 2050 were also estimated, based on the proportions of the population living in urban areas from the UN World Urbanisation Prospects (UN, 2008). Then, for each country, the urban and rural population distributions from GRUMP were adjusted to match the UN/

[4] Data were prepared for 2050 in the same way as for 2030, but we do not include any of the 2050 projections in this paper.

FAO urban and rural totals in 2000, and 'grown' separately to map future urban and rural populations. No attempt at this stage has been made to adjust the urban extents (provided by GRUMP) or to disperse population growth from high density rural areas within countries (international migration and movements from rural to urban areas are already accounted for in the UN projections).

For each time period the food consumption for each commodity was distributed equally among the population of each country resulting in a map of absolute consumption, measured in metric tonnes per pixel. Since the population map is based not on an equal area projection but on a geographic Plate Carée projection the actual land area represented by a pixel decreases north and south of the equator (whereas the size of the pixel remains the same on the map). To make consumption values equivalent across the globe, therefore, these were re-expressed as consumption per square kilometre.

Absolute changes in consumption can then be estimated for each commodity by subtracting the map of consumption estimates for the base year, 2000, from those for 2030 or 2050. Since the changes are applied evenly to the population there is little point in mapping the proportional changes in demand growth for livestock commodities as the population distribution cancels out, resulting in two values within each country – an urban value and a rural value – which is merely the proportional increase in food from 2000 to 2030 from the FAO projections, weighted across rural and urban areas. Whilst maps of relative change in demand would be of little value, these important results can be summarised in tabular form.

MAPPING CHANGING PRODUCTION OF LIVESTOCK COMMODITIES

A similar approach can be taken to mapping production but the process is even more complex and there are greater constraints imposed by the available data. Most importantly is that all livestock are not equal – an increase in demand for milk in Kenya, for example, will not be met by increased production in the arid and semi-arid pastoral areas, but by increased production in the temperate and highland areas that are closer to the main population centres. Accounting for this differential growth is no trivial matter and will require a good understanding of livestock production systems, how these systems are likely to evolve, and how that evolution will be influenced by trade in livestock commodities, resource availability and many other factors.

The ways in which increased demand for livestock products will be met will a) vary for different commodities, b) depend very much on accessibility to growth centres, c) depend on the cost and availability of inputs – the most important of which is usually feed and d) depend on competition from potential imports - for example coastal population centres may more readily be served by importation of cheap frozen meat, or dried milk and egg products, than by increasing production in the vicinity. The ways in which increasing demands are met will vary considerably from centre to centre so simply to increase local production *pro rata*, based on existing livestock distributions, could in some places give rise to quite misleading results.

Table 3 shows the commodities that are included in the FAO projections against the livestock species maps that are available globally from the GLW dataset. For beef production cattle and buffalo have to be combined into a large ruminant layer.

Table 3. Livestock commodities included in the FAO projections and livestock species available from the Gridded Livestock of the World (GLW) databases.

Commodity groupings	Relevant livestock species
Beef, veal and buffalo meat	Cattle, buffalo
Mutton, lamb and goat meat	Sheep, goat
Pig meat	Pigs
Poultry meat	Poultry
Milk and dairy products (whole milk equivalent)	Cattle, buffalo, sheep, goats (camels not available)
Eggs	Poultry

No distinction is made between cattle and buffalo by the FAO projections in terms of animal numbers, off-take rates or carcass weights. The same applies to small ruminants. With milk and dairy products, large ruminants and small ruminants are dealt with separately in the FAO projections. Milk from camels is also included in the FAO projections but the GLW datasets do not currently include this species.

With poultry and ruminants a further problem is faced in that there are two primary outputs; meat and eggs, and meat and milk, respectively. In reality it tends to be different animals in different production systems that are specialised to produce one or the other, though these distinctions are much less evident in small-holder systems. Our available livestock datasets, however, make no such distinction so the production of these commodities has to be distributed evenly across all animals.

In order to map production of different livestock commodities now and in the future the production estimates provided in the FAO projections have been spatially disaggregated using the GLW estimates, merging the species that contribute to the same commodity (see Table 3). As with the estimates of consumption these were then re-assigned from estimates per pixel to estimates per square kilometre (by dividing absolute production in each pixel by its area).

The absolute change in production from 2000 to 2030, or form 2000 to 2050 can again be estimated by simple subtraction, but given the assumptions made in mapping production without accounting for the evolution of livestock production systems, maps of changing production should be treated with extreme caution.

As with consumption, the changes are applied evenly to the livestock distribution so there is no point in mapping the proportional increase as the population of livestock cancels out, resulting in a single figure for each country. In the case of production, there is no urban/rural distinction so we have only one value for each country.

A further possibility here would be to produce maps of livestock numbers in the future using the FAO projections. Stock numbers are also provided in the FAO projections but would need to be split out for species groups: cattle and buffalo, sheep and goats, poultry. Currently it is unlikely that the GLW data are sufficiently detailed to assist much with this, though work is underway to incorporate more detail that would enable such analysis. Potential applications for projected livestock distributions are many and include environmental impact assessment and disease risk mapping. To be of real value, however, such projections would need to be explicitly linked to livestock production systems.

MAPPING PRODUCTION SURPLUSES/DEFICITS

With a few exceptions, demand and supply of livestock products tend to grow hand in hand and imports of livestock products comprise a significant share of total consumption in very few countries. In most cases, therefore, one is unlikely to find much difference in demand and supply trends of livestock products at a national level. Within countries, however, the areas of high production, particularly for the more land-based ruminant species, can be very different from the highly populated consumption areas.

Having spatially disaggregated consumption and production, maps of production surpluses (or deficits) can be produced by simple subtraction. Thus, areas where production exceeds consumption can be identified, and vice versa. Such maps have in the past been created and used to infer movements of livestock or products thereof. Two examples of such, summarised in FAO (2007a), are estimated movements of sheep meat in the Near East (FAO, 2004a) and areas of inferred cattle movements in sub-Saharan Africa, assumed to pose a high risk of Foot and Mouth Disease (FMD) transmission (FAO, 2005).

STANDARDISING CONSUMPTION OF ANIMAL-SOURCE FOODS

Comparing consumption of milk and beef, for example, in terms of weight in kilogrammes, makes no sense; milk is made up almost entirely of water, as compared to beef. To make comparisons among commodities, therefore, they must first be standardised. The SUA approach is primarily designed to look at food insecurity in the world and, as such, contains valuable information that can be used to standardise commodities: the amounts of a) protein, b) fat and c) energy that they provide, per unit of weight. The conversion factors provided obviously vary for each commodity, but, for a given commodity, also differ from country to country and from year to year, based on assumptions about the production environments in which they are produced.

We have applied these conversion factors to the consumption estimates and used them to make regional comparisons of the relative sources of animal-derived protein, and to make composite maps of consumption of animal-source food, in terms of protein.

Results

Maps of production, consumption and production surplus of bovine meat in 2000 are shown in Figure 1 for Africa, along with the growth in demand from 2000 to 2030. The full collection of maps is freely available to be downloaded from the GLW website[1] in graphic, Google Earth or ESRI format GIS file formats for each of six regional tiles: Africa, Asia, Australasia, Europe, North America and South America. The most interesting and useful of these maps are really the ones for demand growth. Some regional examples of these are given for poultry meat in Asia (Figure 2) and Central America (Figure 3), and for pig meat (Figure 4a) and milk (Figure 4b) in Latin America. Global maps of growth in demand for each of the six livestock commodities included in the supply and use analysis are shown in Annex B.

The maps speak for themselves. Figure 1b and Figure 1c clearly highlight the high population areas as those of high beef consumption (Figure 1b) with a negative production surplus (Figure 1c). Of particular note are the coastal areas of North Africa; the Nile delta in Egypt; the East African highlands and the shores of Lake Victoria; the irrigation schemes of Sudan; southern Nigeria; western Senegal; the south-east coastal areas and northern areas of South Africa; and the eastern parts of Madagascar. The pattern of high density urban settlements is evident across the continent. The production surplus map (Figure 1c) clearly shows these areas of net beef consumption in red, contrasting with the areas of excess production, which include the pastoralist areas of East, West and southern Africa.

These maps obviously reflect strongly the distribution of people, but it is in the absolute values, particularly for consumption growth (Figure 1e and Figure 1f), that their real value lies. The same applies to the global maps of demand growth that are shown in Annex B, though important regional differences are also evident. Projected demand growth for poultry meat is widespread in all regions and very high rates of increase are forecast to occur in Asia (Figure 2) and in Central America (Figure 3). Demand growth in areas with large rural populations, such as in India, is rather ubiquitous, whereas in more developed areas such as North America growth is much more focussed on the urban centres. Demand growth for milk and dairy products is also widespread. The pattern of growth seen in Latin America (Figure 4b) shows growth in Brazil to be focussed on the urban centres, in contrast to more broadcast growth in the Andean region, reflecting the more rural population in these countries. The global map of demand growth for pork clearly reflects food preferences determined by cultural and religious factors.

Because of the massive range of values in the maps – very high in densely populated cities and very low in remote rural areas – many of the differences, particularly at the high end of the scale, are difficult to visualise. Tabular data show these differences more clearly. Table 4 provides regional estimates of absolute and proportional growth in demand for the different livestock commodities from 2000 to 2030.

[5] www.fao.org/ag/AGAInfo/resources/en/glw/home.html

Figure 1. a) Production, b) consumption and c) production surplus of beef in 2000; d) consumption in 2030 and e) growth in demand from 2000 to 2030 in Africa, with f) a more detailed view of East Africa.

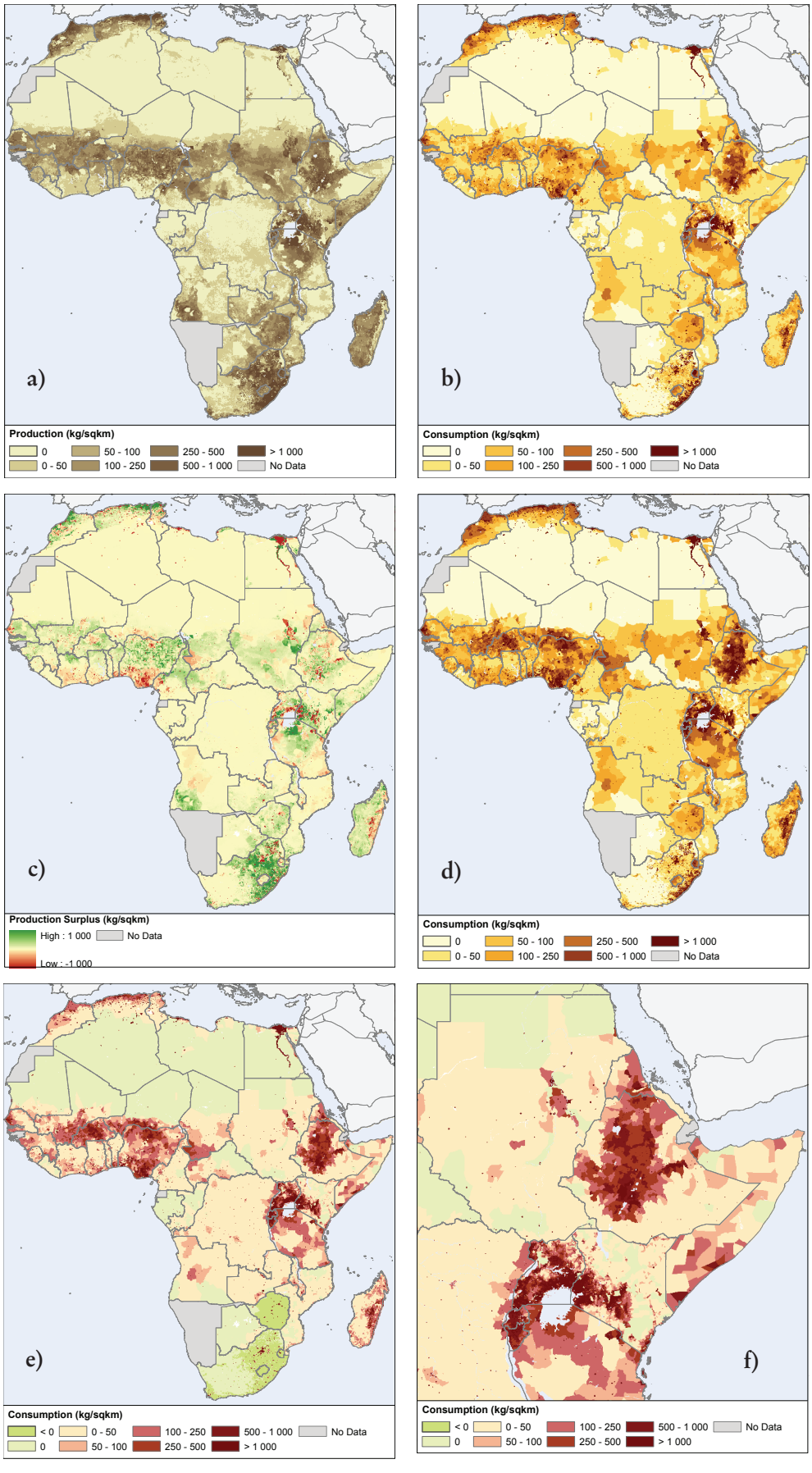


Figure 2. Growth in demand for poultry meat from 2000 to 2030 in Asia.

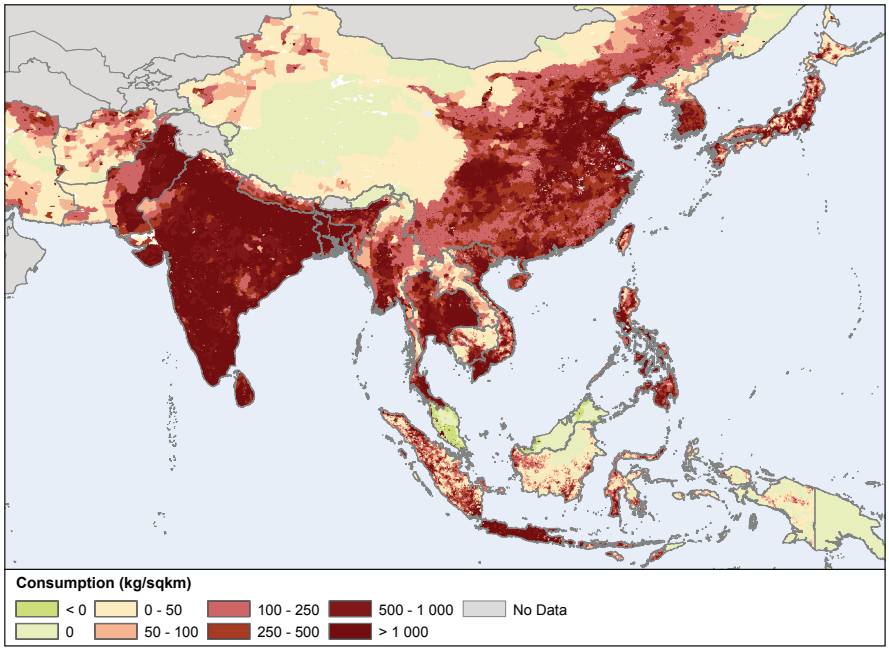


Figure 3. Growth in demand for poultry meat from 2000 to 2030 in Central America.

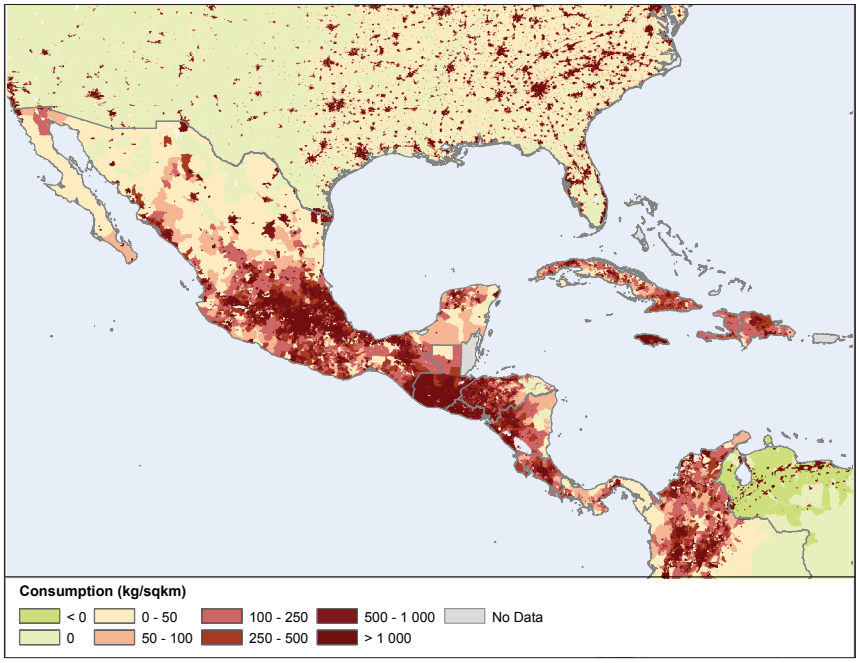
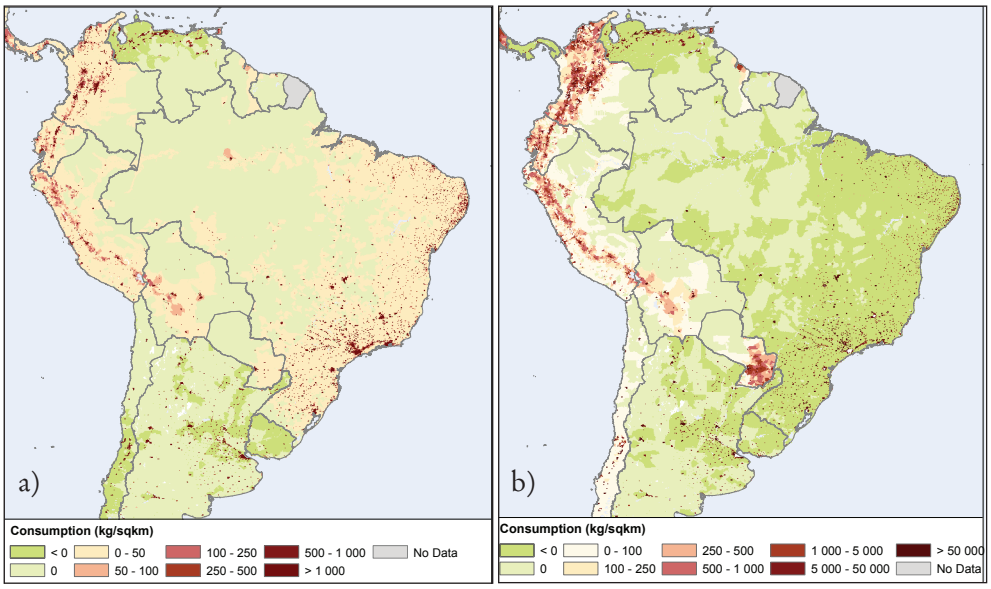


Figure 4. Growth in demand for a) pork and b) milk from 2000 to 2030 in Latin America.



The results presented in Table 4 reflect trends both in population and in consumption patterns. The most striking factor is that growth in poultry consumption outstrips growth in all other animal-source foods in all regions of the world. By far the most dramatic change is the projected increase in demand for poultry meat in South Asia; a 725 percent increase overall. This is driven by growth in demand in India where a staggering 850 percent increase is projected over the 30 year period.

The growth in poultry meat consumption in Asia is accompanied by a four-fold (about 300 percent) increase in egg consumption (280 percent in India alone). In terms of sheer volumes the growth of consumption in milk products is impressive, but very high absolute values for milk and dairy cannot be compared directly with the other livestock commodities since they refer to whole milk equivalent – which contains a large proportion of water in comparison to meat and eggs. In South Asia consumption of milk and dairy products will more than double (125 percent) to some 213 million metric tonnes in 2030. Seventy percent of that – 146 million metric tonnes – will be consumed in India. Because of its large and rapidly-growing population, East Asia is also projected to have large increases in consumption, particularly of pork, poultry meat and milk. Most of this is accounted for by China. The largest absolute and relative increases in mutton consumption are projected to occur in sub-Saharan Africa. Beef consumption is projected to increase most in East Asia and the Pacific, again driven by consumption in China.

Table 5 shows per-capita consumption of the same commodities for the same regions. Similar trends are evident, with the highest increases occurring in Asia, especially for pork, poultry and eggs.

Table 4. Growth in demand for livestock products from 2000 to 2030 ('Abs.' is the absolute increase in annual consumption from 2000 to 2030 in thousands of metric tonnes; 'Prop.' is the increase expressed as a percentage of consumption in 2000).

REGION	Beef		Milk		Mutton		Pork		Poultry		Eggs	
	Abs.	Prop.	Abs.	Prop.	Abs.	Prop.	Abs.	Prop.	Abs.	Prop.	Abs.	Prop.
East Asia and Pacific	8 798	130%	23 765	132%	1 669	58%	28 075	63%	22 522	143%	10 188	45%
China	6 888	132%	15 936	143%	1 537	56%	22 050	54%	14 609	121%	6 810	34%
Eastern Europe and Central Asia	290	11%	4 364	15%	204	40%	112	5%	2 310	108%	684	28%
Latin America and Caribbean	7 302	58%	39 818	72%	239	54%	4 405	100%	14 434	126%	3 246	78%
Middle East and North Africa	1 929	112%	17 913	111%	1 287	103%	9	52%	6 296	243%	1 799	148%
South Asia	3 367	84%	118942	126%	1 722	115%	950	160%	11 491	725%	5 947	294%
India	1 338	51%	79 330	119%	588	85%	921	160%	8 865	844%	4 251	280%
Sub-Saharan Africa	3 768	113%	20 939	107%	1 883	137%	1 106	155%	3 235	170%	1 727	155%
All Regions	**25 454**	**81%**	**225741**	**97%**	**7 004**	**88%**	**34 656**	**66%**	**60 287**	**170%**	**23 590**	**70%**
Low Income Countries	3 523	124%	22 440	136%	1 776	177%	3 481	167%	4 789	301%	1 972	208%
Lower Middle Income	14 642	114%	158467	124%	4 602	82%	26 861	61%	38 353	203%	17 470	68%
Upper Middle Income	7 289	47%	44 834	50%	625	46%	4 314	68%	17 145	115%	4 148	60%
High Income Countries	2 441	15%	31 312	31%	275	33%	2 935	22%	12 414	65%	1 911	24%

Note: The regions are defined according to the World Bank 2010 classification (World Bank, 2010). A full list of the countries included in the WB regions is provided in Annex A, along with their income ratings.

Tables 4 and 5 also highlight differences in consumption growth across low, middle, and high income countries. It is abundantly clear that growth in total and per-capita consumption of animal-source foods is much less in the high income countries compared to the low and middle income countries. This is partly because of a saturation effect – people already eat as much animal-source foods as they need and would like to – but also due to a trend towards reduced consumption of animal-source foods, particularly of beef, in many of these countries.

The effect that urbanisation will have on changing demand for animal-source foods is not illustrated in Table 4, nor does it come out clearly in the maps produced at the scales of those in Figures 1-4, or those in Annex B. Country-level estimates of demand, production, import and export of the different livestock commodities in 2000 and 2030 and their absolute and proportional changes are reported in Annex C. These tables include two important disaggregations: a) a breakdown of the growth attributable to changing consumption patterns, in comparison with that due to changing population numbers and b) the proportion of change projected to occur in urban areas, versus that projected to occur in rural areas.

Table 5. Growth in per-capita demand for livestock products from 2000 to 2030 ('Abs.' is the absolute increase in annual per-capita consumption from 2000 to 2030 in kg/person; 'Prop.' is the increase expressed as a percentage of consumption in 2000).

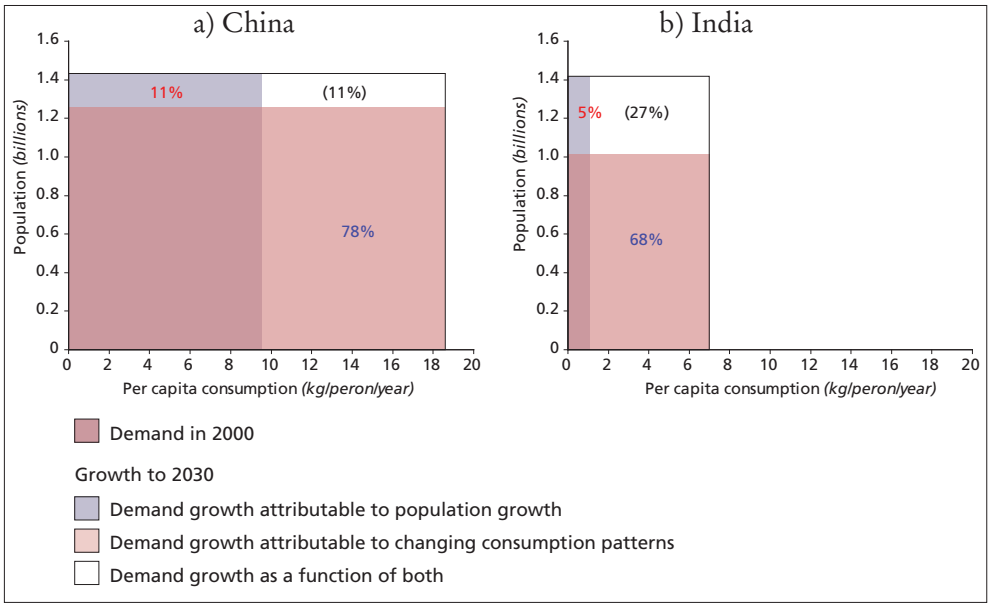
REGION	Beef		Milk		Mutton		Pork		Poultry		Eggs	
	Abs.	Prop.	Abs.	Prop.	Abs.	Prop.	Abs.	Prop.	Abs.	Prop.	Abs.	Prop.
East Asia and Pacific	3.8	61%	7.6	55%	0.2	39%	6.3	61%	7.7	91%	2.8	48%
China	4.3	103%	10.1	113%	0.8	37%	11.5	35%	9.1	94%	2.8	17%
Eastern Europe and Central Asia	10.7	25%	26.2	20%	0.5	15%	2.0	28%	11.4	116%	3.8	36%
Latin America and Caribbean	17.2	16%	24.7	27%	0.1	8%	2.5	34%	13.7	73%	2.6	45%
Middle East and North Africa	5.5	42%	20.9	31%	1.6	31%	0.0	12%	11.2	97%	2.6	49%
South Asia	4.2	24%	20.7	32%	1.0	45%	0.2	78%	4.1	271%	1.9	134%
India	0.2	8%	37.6	57%	0.2	33%	0.5	86%	6.0	577%	2.6	173%
Sub-Saharan Africa	5.3	25%	6.1	17%	0.7	30%	0.6	47%	2.6	73%	0.9	66%
All Regions	**7.8**	**26%**	**17.7**	**26%**	**0.7**	**28%**	**1.9**	**44%**	**8.5**	**94%**	**2.4**	**48%**
Low Income Countries	4.5	26%	4.3	16%	0.6	32%	1.3	70%	2.2	95%	0.9	73%
Lower Middle Income	7.2	32%	20.3	38%	0.7	32%	1.5	37%	9.0	109%	2.4	54%
Upper Middle Income	15.2	17%	21.8	22%	0.5	19%	2.3	37%	13.1	66%	2.8	43%
High Income Countries	21.0	-1%	6.1	3%	-0.7	-10%	2.0	11%	9.3	36%	0.9	9%

Note: The regions are defined according to the World Bank 2010 classification (World Bank, 2010). A full list of the countries included in the WB regions is provided in Annex A, along with their income ratings.

It is interesting to distinguish the proportion of overall growth attributable to changing consumption patterns, in comparison with that due to changing population numbers. Growth due mainly to increasing numbers of people is unlikely to require particular shifts in the structure of a given sector, if the proportion of the population who produce remains constant (though when population growth involves significant urbanisation this proportion is likely to decrease). When, however, growth is due to changing consumption patterns, it will require structural changes in the sector, through a combination of: a) an increase in the number of producers, relative to consumers; b) intensification of production; and c) importation of that commodity. By and large, the second change is the most likely to occur in order to meet this 'disproportionate' increase in demand.

This is illustrated in Figure 5, which shows how overall growth in demand for poultry meat in China and India is divided among population growth and changing consumption patterns (Table C.10). The percentages shown in Figure 5 indicate the proportion of the overall growth that is attributable to a) population growth

Figure 5. Demand growth for poultry meat in a) China and b) India, 2000 to 2030, disaggregated into that accounted for by population growth, versus that accounted for by changing consumption patterns.



(red) and b) increased consumption rates for poultry meat (blue). Looking at the diagram, though, it is quite clear that, if population numbers were to stay the same, consumption in China would slightly less than double, whereas that in India would increase seven-fold. The implications for the poultry sector in India are immense. The FAO projections do not anticipate this increase in demand to be met through imports, which remain at zero (Table C.9), but through an increase in production. This will require a massive, rapid intensification of the poultry sector.

Some dramatic details also become evident when growth is disaggregated in terms of urban versus rural areas. Looking again at poultry meat consumption in India, for example, which is projected to increase by about 8.8 million metric tonnes per year in 2030, compared to in 2000; an 844 percent increase (Table C.9). Whilst the greater share of this increase – 5.1 million tonnes – is to occur in the rural areas (compared to 3.7 million tonnes in urban areas), the relative increase in the urban areas – 1 277 percent – will be almost twice that in the rural areas – 677 percent. This contributes to the driving force behind the rapid intensification in the poultry sector that is ongoing in India (USDA, 2004).

Similar patterns are seen in other commodities. For example, pork consumption in China overall is projected to increase by 22 million metric tonnes between 2000 and 2030, a 55 percent increase (Table C.7). Urban consumption, however, is projected to increase by 20 million metric tonnes over this period, a 160 percent increase, whilst rural consumption is projected to increase only by 1 million metric tonnes (5 percent increase); reflecting very high rates of urbanisation.

For each of the cities considered in the GRUMP urban extents database, estimates of consumption in 2000 and 2030 and growth in demand from 2000 to 2030 have been extracted from the digital maps. The contribution made by each city to overall growth in demand for each country has also been estimated (expressed as

the percentage of overall national growth in demand accounted for by each city). For a selection of cities in each region (generally the most populous), data on consumption in 2000 and 2030, growth in demand from 2000 to 2030, and the contribution that makes to overall, national growth, are presented in Annex D.

Results show that the highest increases in consumption will occur, not surprisingly, in cities with the largest rates of increase in population. However, their contribution to the national growth can be fairly low, if they only account for a small proportion of the population as a whole. This is particularly striking if we look at consumption of poultry meat and eggs in India, for example, where the populations in the main cities are expected to double, more or less (from 2000 to 2030) and consumption of poultry meat is expected to increase thirteen-fold. Consumption growth in the three largest cities together, however, accounts for less than 10 percent of the total growth. This is in stark contrast to other countries, where growth in demand can be accounted for in large part by a single city. Sixty-four percent of overall growth in demand for beef in South Africa will, for example, be accounted for by Johannesburg (Table D.1). Figure 6 shows how growth in consumption of milk will be accounted for in Kenya: 32 percent of overall growth accounted for by Nairobi alone, completely dwarfing the four next largest cities.

If consumption estimates of commodities are standardised by expressing them in some common unit, it is possible: a) to combine them and b) to compare them, in meaningful ways. An example of each is shown. Figure 7a shows the global, projected consumption of protein from animal-source foods in 2030, per square kilometre, derived by combining the totals from the six commodity groups. This obviously reflects strongly the distribution of people in the world, highlighting, for example, the widespread, high-density populations of South and East Asia. If however, the effect of population is removed by expressing this as consumption of protein derived from animal-source foods, per person (Figure 7b), a very different picture emerges. Figure 7b shows the very high levels of protein derived from animal-source foods per person in the United States of America, Argentina and Australia, intermediate levels in much of North Africa, the Middle-East and Asia,

Figure 6. Demand growth for milk in Kenya, 2000 to 2030, disaggregated by rural and urban areas, with urban growth shown separately for the five largest cities.

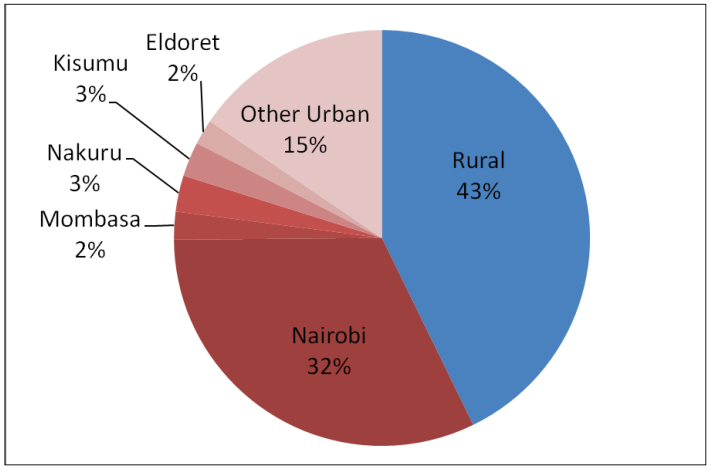
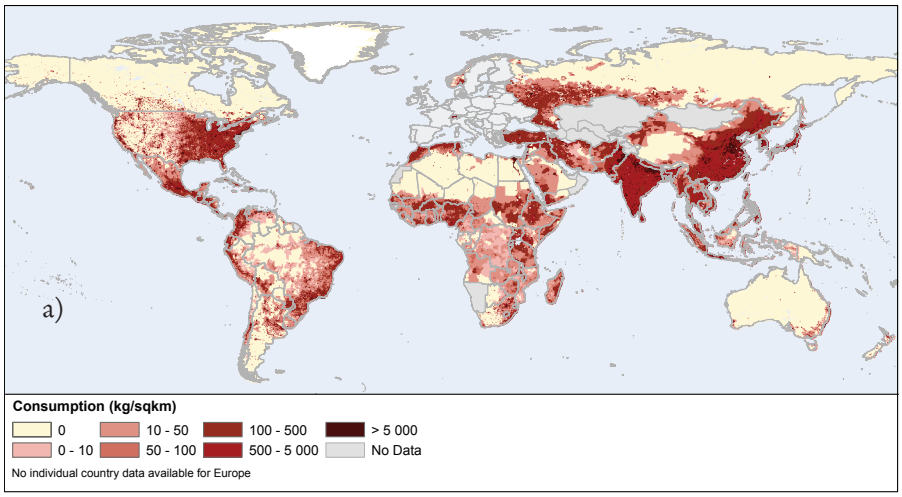
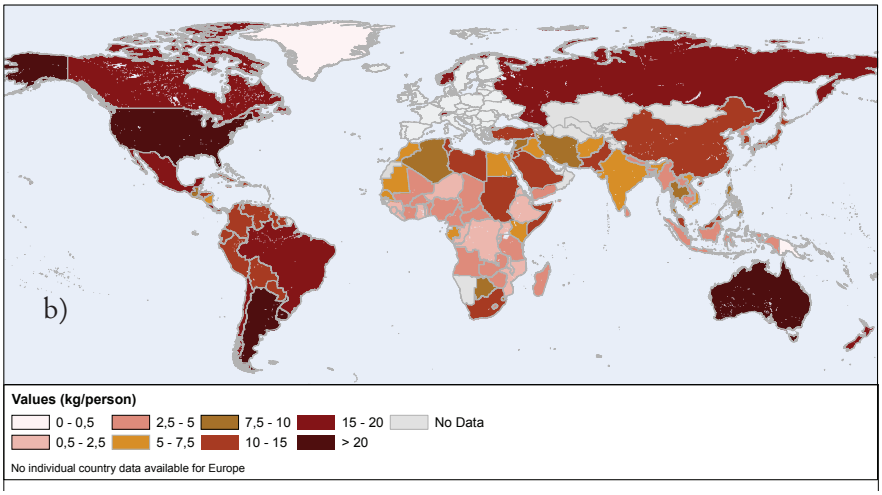


Figure 7. Global, projected consumption of protein from animal-source foods in 2030: (a) per square kilometre and (b) per person.





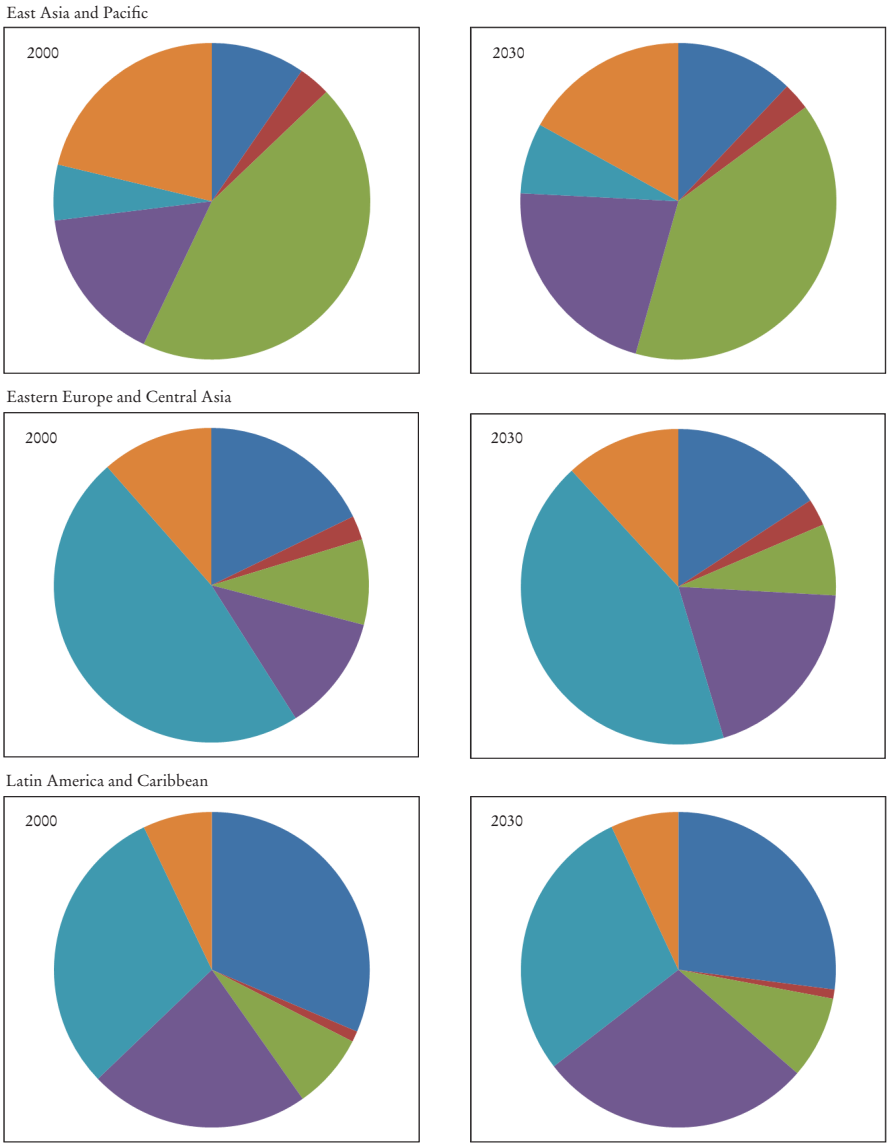
and very low values over most of sub-Saharan Africa and much of South and South-East Asia.

Expressing consumption in common units also allows commodities to be compared. Figure 8 shows the proportional intake of protein derived from animal-source foods for the major developing regions of the world in 2000 and in 2030, from each of the six major livestock commodity groups. Regional differences are very clear. East Asia and the Pacific is distinguished, not only by the large contribution of pork meat to overall protein derived from animal-source foods (almost half), but also by the large contribution made by eggs; both considerably larger than in any other region. Latin America and the Caribbean have a similar pattern of intake compared to the high income countries, though there is a smaller contribution from beef in the high income countries; the difference being made up by pork, largely. The Middle East and North Africa and sub-Saharan Africa are characterised by relatively large contributions from mutton, but poultry is quite important in the Middle East and North Africa, and beef more so in sub-Saharan Africa. The con-

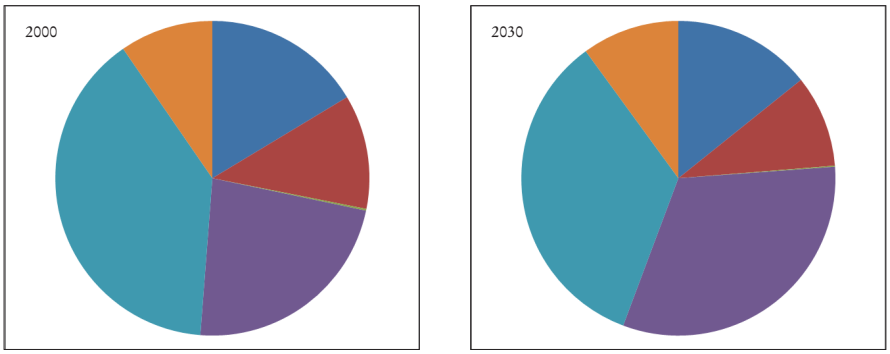
tribution made by pork is negligible in the Middle East and North Africa and very small in South Asia, reflecting its absence in Muslim areas. Beef makes the greatest contribution to dietary protein from animal-source foods in Latin America and the Caribbean and in sub-Saharan Africa. The most striking feature of all, though, is the massive contribution made by the dairy sector in South Asia, where almost 70 percent of dietary protein from animal-source foods comes from milk, and products thereof. This is in stark contrast to East Asia and the Pacific.

Projected changes in these patterns to 2030 are relatively small. The contribution made by poultry is predicted to increase in all regions of the world; by almost ten percentage points in Eastern Europe and Central Asia, the Middle East and North Africa and South Asia. The contributions made by beef and milk are projected to decline everywhere, with the exception of East Asia and the Pacific, where it is expected to increase by two percentage points.

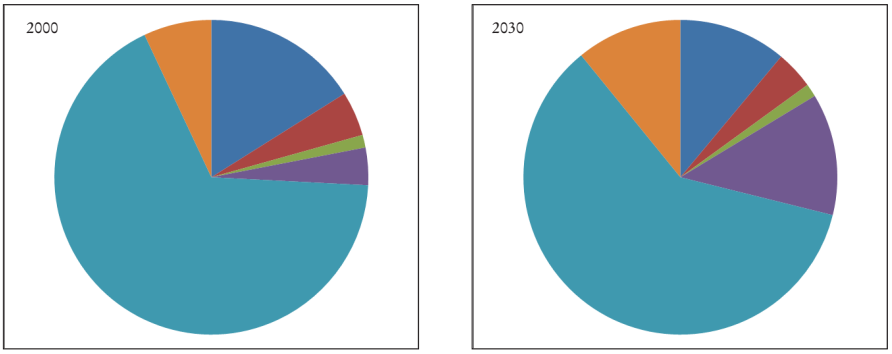
Figure 8. Proportional consumption of protein from animal-source foods, broken down by the six major livestock commodity groupings, in 2000 and 2030, for the major developing regions of the world, and for high income countries.



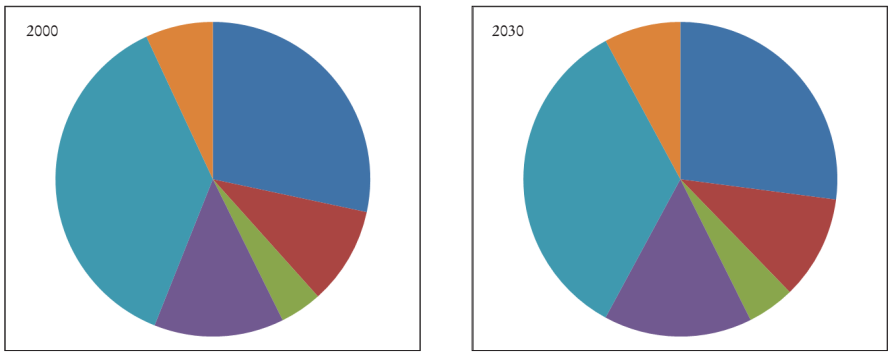
Middle East and North Africa



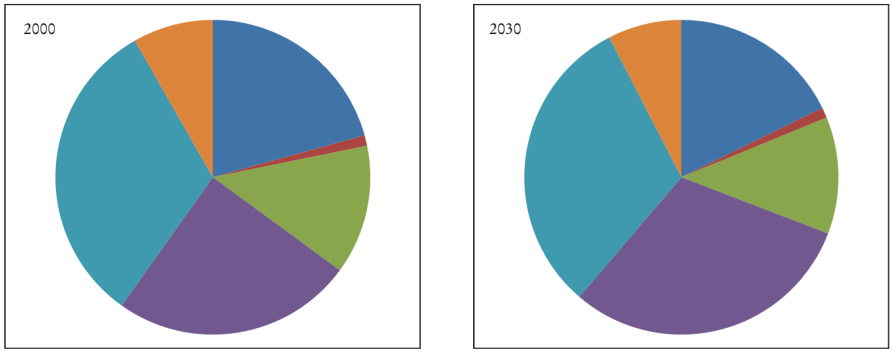
South Asia



Sub-Saharan Africa



High income countries



Discussion and conclusions

The maps and tabular data described here have many potential applications, but before elaborating on these it is worthwhile to comment on some of the limitations and assumptions in their generation and to mention some ways in which they could be improved upon.

On mapping demand for animal-source foods, growing human populations based only on existing population distributions is probably somewhat simplistic and, furthermore, when growing urban populations no allowance has been made for urban extents to increase. The latter could be investigated empirically by plotting urban extent against urban population for a series of settlements, by region, to see if there is a relationship that could be used to expand the urban extents accordingly. But, even if there were a strong relationship – implementing selective growth of urban extents within the GIS would by no means be simple. A further limitation is the assumption that consumption patterns for all people in a country are the same. Whilst sub-national data on consumption rates of different commodities could be found for some countries, the coverage and degree of standardisation would be poor. In theory, models could be developed that allowed such patterns to be extended to areas where no such data exist, using proxies such as wealth, or proximity to urban areas. Determining the extent to which such generalisations could be made would require a considerable research effort. A reasonable first step, though, would be to estimate differences between urban and rural consumption rates for each commodity.

The limitations and assumptions in mapping production are even greater. Assuming production levels to be the same for all livestock producing a particular commodity in a country is clearly wrong, but dealing with it appropriately was beyond the scope of this paper. We know well that production varies among production systems and agro-ecological zones and, indeed, we regularly use these differences to stratify herd models. This should be accounted for in an intelligent way when mapping livestock production. With the more land-tied, ruminant livestock (cattle, buffalo, sheep and goats) the environmentally-derived production system stratifications (e.g. Thornton *et al.,* 2002) are most relevant. With monogastric species (pigs and poultry) the more important distinction will be in the degree of intensification and industrialization; growing demand in urban centres will be met primarily by intensive, industrial production (Robinson *et al., in press*). Growing the livestock populations based only on existing distributions is even more risky than is the case with human population distributions. Herd models that incorporate feed resource requirements should be used to increase cattle and small ruminant populations – with appropriate dispersal functions coming in to play at high stocking rates. For pigs and poultry, rules should probably be devised for placing the increased production in relation to, and in proportion to the increases in demand, and where access to concentrate feed is good.

Whilst production surplus maps have many potential uses, in addition to the problems relating to each of the components (consumption and production), described above, there are further issues that arise when these two sides of the SUAs are brought together. Consumption refers only to food consumption for a commodity, whereas production refers to all production that goes towards food, indus-

trial non-food use, feed, seed and waste. These differences are relatively small for meat products but significant for milk and eggs. Nor are the effects of the trade balances visible from the maps – in cases where this results in significant importation of a commodity, a proportion of the consumption will be met by imported product, rather than by movements from high production areas within that country. In the reverse situation, where a country is a net exporter – some of the production will be exported rather than moved to areas of high consumption. Whilst the FAO projections do list imports and exports there is no indication of where commodities come from and go to. Since in most cases net trade in livestock commodities is relatively small, no attempt was made here to adjust for trade and the maps should give reasonable indications of movements within countries. A further issue is that the use of human population distributions as a predictor variable to disaggregate the reported livestock statistics (FAO, 2007a), may lead to some circularity when combining maps of consumption and production. The effect of this could not be anticipated, but human population distributions could be excluded from the list of predictor variables used in mapping livestock distribution and abundance, for this purpose.

Many of the above issues could be dealt with, given time and research inputs, but other important issues relate to the SUAs and the projections themselves. It is important to remember that the primary objective of the SUAs is to evaluate how many people in the world are under-nourished. Each year FAO produces its flagship publication: the *State of Food Insecurity in the World* (most recently, FAO, 2010b). Whilst the topical emphasis varies from year to year, the central theme is about how many people in the world are under-nourished. This number is re-evaluated each year using a food balance sheet approach. For a broad group of crop and livestock commodities, national estimates of the food available for human consumption are made using the SUAs, along with the caloric content of each food commodity. These data are used to calculate total availability of calories in the country. Since different age and sex groups have different minimum caloric requirements, data on population structure are used to estimate the total caloric requirements for the entire population. Household survey data, typically used to measure living standards, are used to estimate the country-specific distribution of calories. Then, from the total calories available, total calories needed for a given population, and the distribution of calories, the number of people who fall below the minimum energy requirement is estimated. This represents the number of undernourished people.

With this objective it is quite reasonable to combine bovines; sheep and goats; poultry species; and milk and eggs from different species: eggs from ducks and chickens have relatively similar caloric, protein and fat values per unit of weight, for example. From a production perspective, however, this is far from ideal: ducks and chickens, for example, are produced in quite different production systems, achieving different production efficiencies, often serving quite different purposes and occurring in different areas.

That, for each commodity, the production coefficients - off-take rates, carcass weights and, for milk and eggs, yields – that are applied to the stocks, are averaged across the country presents a significant limitation to the approach. Considerably greater accuracy could be achieved if the stocks in each country were divided among the prevalent production systems, and appropriate production coefficients

applied to each. Moreover, when projecting production this would allow a) for the evolution of production systems to be accounted for explicitly, for example a migration from extensive to more intensive systems, and b) for the evaluation of different scenarios of livestock sector growth and evolution. In a collaborative effort between the Economic and Social Development Department (ESS), which is responsible for the SUAs and projections, and the Livestock Production and Health Division (AGA), ways in which this could be done and the benefits of so doing, are being evaluated, initially for the pig sector, globally.

The disaggregation of demand growth, presented here, shows that the majority of the growth will stem from the burgeoning urban areas of the developing world, rather than rural populations, and closely linked to that, will be driven by changing consumption patterns to a far greater extent than by population growth. Demand growth associated with increasing consumption rates and urbanisation will require structural changes to the livestock sector in order that demand is met by increased supply: intensification of production and longer supply chains.

The growth in demand for animal source food offers opportunities for economic growth, poverty reduction and increased food security in rural areas. Livestock producers who can gain access to growing markets may benefit from increased sales and higher prices. Many of these producers number among the livestock-dependent poor, but the extent to which poor, or even small-scale livestock producers can link to the growing markets will vary greatly from place to place, and for different commodities. Even where production is in the hands of larger-scale commercial livestock owners though, there will be employment opportunities generated along the value chain; both up-stream and down-stream of the producer. Growing markets for animal-source foods will stimulate demand for purchased inputs such as young or breeding stock, genetic material, feeds and animal health services, for example. Poorer urban consumers should also benefit from more affordable meat, milk and eggs; enjoying the nutritional benefits associated with increased dietary intake of animal-source foods.

But the outcomes of livestock sector growth are by no means all positive; detrimental social, animal health, public health and environmental impacts of rapid sector growth are well-documented in '*Livestock in the balance*' (FAO, 2010a).

Small-scale, mixed production systems face increasing competition from larger-scale intensive systems. There are social implications for small-holders whose opportunities to supply new markets are constrained, and who can be squeezed out of markets to which they have traditionally been linked. Combining spatial data on demand growth, as described here, with information on livestock production systems and the distributions of poor livestock keepers, (e.g. Thornton *et al*., 2002; Robinson *et al.*, *in press*) offers the possibility of identifying vulnerable rural populations of livestock keepers. This in turn will help with targetting, impact assessment and the design of policy and institutional measures that that can assist the more commercially-oriented small-holders in accessing growing markets, for example through their ability to meet increasingly stringent health and food-safety standards; to obtain access to capital and credit; and to improve their access to input services. For those small-holders that are unable to compete, policies need to be designed that facilitate their transition from the livestock sector towards other livelihood options.

Significant animal and public health risks have also been associated with the concentration of intensive production systems in close proximity to densely-populated urban areas, and particularly in areas where this may occur among large populations of livestock raised by small-holders, under extensive production systems, with low levels of biosecurity. The fears are firstly of rapid multiplication of pathogens moving from extensive to intensive systems (and vice-versa), which could lead to the emergence or re-emergence of diseases, for example through virulence jumps within high-density, genetically similar, susceptible populations, and secondly the passage of zoonotic pathogens to the human population from these high-density production systems. When thousands of animals are confined in close proximity the probability of pathogen transfer within and between populations is greatly elevated, and in consequence, so is the rate of pathogen evolution. Furthermore, the waste from these livestock can contain large quantities of pathogens, posing further risks of transmission to hosts, often wildlife, outside the production system. It has been shown that highly pathogenic avian influenza (HPAI) viruses can be produced from low pathogenic strains following consecutive passages through chickens of similar genetic makeup; the very conditions found in intensive production units (Ito *et al.,* 2001). Rapid increases in the number of large-scale production units would thus favour the emergence of highly pathogenic strains from a pool of low pathogenic viruses maintained in wild or domestic birds. Panzootic HPAI H5N1 emerged in China in 1996 (Li *et al.,* 2004) following several years of intensification of chicken and duck production. Whilst the specific roles of intensive production systems in the emergence of novel strains of pathogen are not well understood, and there are few if any examples where it has been shown conclusively that the occurrence of intensive systems in the midst of an abundance of extensive production causes elevated risk, CAST (2005) concluded that a consequence of intensive livestock production systems was that they created ideal conditions for rapid selection and amplification of highly pathogenic strains of disease agents. FAO (2007b) provides a comprehensive review of how pathogens can get in and out of such, apparently biosecure systems.

With the extensive use of antimicrobial drugs in intensive production systems, genes for antimicrobial resistance can also be selected for and amplified, posing a risk that such genes migrate into human-infective pathogens (Bonfoh *et al*., 2010). Maps of demand growth are important inputs to predicting where the production of livestock is likely to increase, and where intensive production units may be expected to emerge in close proximity to more extensive production systems.

Maps of production surplus can be produced by combining maps of livestock production with those of animal-source food consumption (Figure 1c, for example). These can be used to infer trade-related movement of livestock or livestock commodities from areas of production surplus to areas where demand exceeds supply. Areas in Africa, for example, where such movements of cattle would be expected, have been associated with risk of FMD transmission (FAO, 2005). Maps of demand growth for animal-source foods, combined with production maps, can therefore make important contributions to mapping the risk of disease emergence, persistence and spread.

Tilman *et al*. (2001) warn of some of the potentially massive, irreversible environmental impacts of agricultural expansion over the coming decades; highlighting the need to anticipate and monitor growth. Whilst intensive systems produce relatively less GHG per unit of output than do extensive systems, they often exceed the nutrient adsorptive capacity of the land on which they occur. It has been estimated that more than 130 000 square kilometres of arable land in China and 30 000 square kilometres in Thailand, have an annual livestock nutrient waste production of phosphate of at least 20 kilograms per hectare per year in excess of the adsorptive capacity of the surrounding ecosystem (World Bank, 2005). Currently, animal waste receives little or no treatment and makes a significant contribution to surface water pollution and terrestrial nitrogen deposition (NRC, 2000). If used to locate the distribution of intensive production units, demand growth maps can contribute to pin-pointing areas of likely environmental pollution. More generally, maps of production growth could be used to identify areas of elevated, livestock related environmental impacts, be they through GHG emissions, land degradation or waste production, so that policies and interventions can be appropriately targetted.

By far the most costly input to intensification of livestock production is feed, which, in highly intensive poultry operations, for example, can account for 60 to 80 percent of the total cost of inputs (FAO, 2004b). As livestock production intensifies, it becomes de-coupled from the land resource; dependent increasingly on traded feed concentrates than on locally available feed resources. In 2004, for example, 34 percent of the global cereal harvest, a total of 690 million tonnes, were fed to livestock (Steinfeld *et al*., 2006). A rapid growth of intensive production of livestock will call for commensurate increases in the production of feed, which will exert considerable pressures on land and water resources in some areas of the world.

There are many factors which influence the demand for animal-source foods now and in the future. Some will come from the supply side; competition for land, carbon constraints and legislation relating to the environment and animal welfare, for example. Others will come from the demand side, such as increasing wealth and urbanisation, human health concerns and socio-cultural trends. How exactly these will interact to determine demand for and production of specific livestock commodities in the coming decades is uncertain (Thornton, 2010). What is certain is that the land use changes required to meet the projected demands in livestock may contribute substantially to undermining the capacity of global ecosystems to sustain food production, maintain fresh water and forest resources, regulate climate and air quality and ameliorate infectious diseases (Foley *et al.,* 2005). It is important therefore, carefully to monitor the situation as it unfolds, and to take timely and appropriate action to ensure that the benefits of livestock sector growth are maximised and that the many possible negative effects are controlled.

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Annex A. Countries and country groupings

Table A 1. List of countries included in the FAO projections, grouped by World Bank region and showing the most recent income groupings (World Bank, 2010).

COUNTRY	INCOME LEVEL (World Bank, 2010)	FAO PROJECTIONS	
		Country data availability	Country aggregate
Latin America and Caribbean			
Argentina	Upper middle	I	
Belize	Lower middle	G	Latin America and Caribbean
Bolivia	Lower middle	I	
Brazil	Upper middle	I	
Chile	Upper middle	I	
Colombia	Upper middle	I	
Costa Rica	Upper middle	I	
Cuba	Upper middle	I	
Dominica	Upper middle	G	Latin America and Caribbean
Dominican Republic	Upper middle	I	
Ecuador	Lower middle	I	
El Salvador	Lower middle	I	
Grenada	Upper middle	G	Latin America and Caribbean
Guatemala	Lower middle	I	
Guyana	Lower middle	I	
Haiti	Low	I	
Honduras	Lower middle	I	
Jamaica	Upper middle	I	
Mexico	Upper middle	I	
Nicaragua	Lower middle	I	
Panama	Upper middle	I	
Paraguay	Lower middle	I	
Peru	Upper middle	I	
Saint Kitts and Nevis	Upper middle	G	Latin America and Caribbean
Saint Lucia	Upper middle	G	Latin America and Caribbean
Saint Vincent and the Grenadines	Upper middle	G	Latin America and Caribbean
Suriname	Upper middle	I	
Uruguay	Upper middle	I	
Venezuela	Upper middle	I	
Sub-Saharan Africa			
Angola	Lower middle	I	
Benin	Low	I	

'Country data availability' indicates whether data, for the projections described in this paper, are available for individual countries (I), for country aggregates (G), or not available (N). The term 'Not listed' refers to countries that are not considered in the FAO projections. For countries that are aggregated, the last column indicates those groups, according FAO group classification which therefore might not correspond to the WB regions. Source: Bruinsma (personal communication, 2010).

COUNTRY	INCOME LEVEL (World Bank, 2010)	FAO PROJECTIONS	
		Country data availability	Country aggregate
Botswana	Upper middle	I	
Burkina Faso	Low	I	
Burundi	Low	I	
Cameroon	Lower middle	I	
Cape Verde	Lower middle	G	Sub-Saharan Africa
Central African Republic	Low	I	
Chad	Low	I	
Comoros	Low	G	Sub-Saharan Africa
Congo	Lower middle	I	
Cote d'Ivoire	Lower middle	I	
Dem. Rep. of the Congo	Low	I	
Eritrea	Low	I	
Ethiopia	Low	I	
Gabon	Upper middle	I	
Gambia	Low	I	
Ghana	Low	I	
Guinea	Low	I	
Guinea-Bissau	Low	G	Sub-Saharan Africa
Kenya	Low	I	
Lesotho	Lower middle	I	
Liberia	Low	I	
Madagascar	Low	I	
Malawi	Low	I	
Mali	Low	I	
Mauritania	Low	I	
Mauritius	Upper middle	I	
Mayotte	Upper middle	Not listed	
Mozambique	Low	I	
Namibia	Upper middle	N	
Niger	Low	I	
Nigeria	Lower middle	I	
Rwanda	Low	I	
Sao Tome and Principe	Lower middle	G	Sub-Saharan Africa
Senegal	Low	I	
Seychelles	Upper middle	G	Sub-Saharan Africa
Sierra Leone	Low	I	
Somalia	Low	I	
South Africa	Upper middle	I	
Sudan	Lower middle	I	
Swaziland	Lower middle	I	
Togo	Low	I	

COUNTRY	INCOME LEVEL (World Bank, 2010)	FAO PROJECTIONS	
		Country data availability	Country aggregate
Uganda	Low	I	
United Republic of Tanzania	Low	I	
Zambia	Low	I	
Zimbabwe	Low	I	
Middle East and North Africa			
Algeria	Upper middle	I	
Djibouti	Lower middle	G	Sub-Saharan Africa
Egypt	Lower middle	I	
Iran (Islamic Republic of)	Lower middle	I	
Iraq	Lower middle	I	
Jordan	Lower middle	I	
Lebanon	Upper middle	I	
Libyan Arab Jamahiriya	Upper middle	I	
Morocco	Lower middle	I	
Syrian Arab Republic	Lower middle	I	
Tunisia	Lower middle	I	
West Bank	Lower middle	Not listed	
Yemen	Low	I	
East Asia and Pacific			
American Samoa	Upper middle	Not listed	
Cambodia	Low	I	
China	Lower middle	I	
Dem People's Rep of Korea	Low	I	
Fiji	Upper middle	G	East Asia
Indonesia	Lower middle	I	
Kiribati	Lower middle	G	East Asia
Lao People's Dem. Rep.	Low	I	
Malaysia	Upper middle	I	
Marshall Islands	Lower middle	Not listed	
Micronesia (Federated States of)	Lower middle	Not listed	
Mongolia	Lower middle	N	
Myanmar	Low	I	
Papua New Guinea	Lower middle	G	East Asia
Philippines	Lower middle	I	
Samoa	Lower middle	N	
Solomon Islands	Lower middle	G	East Asia
Thailand	Lower middle	I	
Tonga	Lower middle	N	
Vanuatu	Lower middle	G	East Asia
Viet Nam	Low	I	

COUNTRY	INCOME LEVEL (World Bank, 2010)	FAO PROJECTIONS	
		Country data availability	Country aggregate
South Asia			
Afghanistan	Low	I	
Bangladesh	Low	I	
Bhutan	Lower middle	Not listed	
India	Lower middle	I	
Maldives	Lower middle	N	
Nepal	Low	I	
Pakistan	Lower middle	I	
Sri Lanka	Lower middle	I	
Eastern Europe and Central Asia			
Albania	Lower middle	G	Eastern Europe
Armenia	Lower middle	G	Central Asian Republics
Azerbaijan	Lower middle	G	Central Asian Republics
Belarus	Upper middle	G	Eastern Europe
Bosnia and Herzegovina	Upper middle	G	Eastern Europe
Bulgaria	Upper middle	G	Eastern Europe
Georgia	Lower middle	G	Central Asian Republics
Kazakhstan	Upper middle	G	Central Asian Republics
Kyrgyzstan	Low	G	Central Asian Republics
Latvia	Upper middle	G	EUN9
Lithuania	Upper middle	G	EUN9
Moldova, Republic of	Lower middle	G	Eastern Europe
Poland	Upper middle	G	EUN9
Romania	Upper middle	G	Eastern Europe
Russian Federation	Upper middle	I	
Serbia and Montenegro	Upper middle	G	Eastern Europe
Tajikistan	Low	G	Central Asian Republics
The former Yug. Rep. of Macedonia	Upper middle	G	Eastern Europe
Turkey	Upper middle	I	
Turkmenistan	Lower middle	G	Central Asian Republics
Ukraine	Lower middle	G	Eastern Europe
Uzbekistan	Low	G	Central Asian Republics
High Income Countries			
Andorra	High	Not listed	
Antigua and Barbuda	High	G	Latin America and Caribbean
Aruba	High	Not listed	
Australia	High	I	
Austria	High	G	EU15
Bahamas	High	G	Latin America and Caribbean
Barbados	High	G	Latin America and Caribbean

COUNTRY	INCOME LEVEL (World Bank, 2010)	FAO PROJECTIONS	
		Country data availability	Country aggregate
Belgium	High	G	EU15
Bermuda	High	G	Latin America and Caribbean
Brunei Darussalam	High	G	East Asia
Canada	High	I	
Croatia	High	G	Eastern Europe
Cyprus	High	G	Near East/North Africa
Czech Republic	High	G	EUN9
Denmark	High	G	EU15
Equatorial Guinea	High	Not listed	
Estonia	High	G	EUN9
Finland	High	G	EU15
France	High	G	EU15
French Polynesia	High	G	East Asia
Germany	High	G	EU15
Greece	High	G	EU15
Greenland	High	Not listed	
Guam	High	Not listed	
Hong Kong	High	Not listed	
Hungary	High	G	EUN9
Iceland	High	I	
Ireland	High	G	EU15
Israel	High	I	
Italy	High	G	EU15
Japan	High	I	
Kuwait	High	G	Near East/North Africa
Liechtenstein	High	Not listed	
Luxembourg	High	G	EU15
Malta	High	G	EUN9
Monaco	High	Not listed	
Netherlands	High	G	EU15
Netherlands Antilles	High	G	Latin America and Caribbean
New Caledonia	High	G	East Asia
New Zealand	High	I	
Norway	High	I	
Oman	High	Not listed	
Portugal	High	G	EU15
Qatar	High	Not listed	
Republic of Korea	High	I	
Saudi Arabia	High	I	
Singapore	High	N	
Slovakia	High	G	EUN9

COUNTRY	INCOME LEVEL (World Bank, 2010)	FAO PROJECTIONS	
		Country data availability	Country aggregate
Slovenia	High	G	EUN9
Spain	High	G	EU15
Sweden	High	G	EU15
Switzerland	High	I	
Trinidad and Tobago	High	I	
United Kingdom	High	G	EU15
United Arab Emirates	High	G	Near East/North Africa
United States of America	High	I	
United States Virgin Islands	High	Not listed	

Note: EU15 refers to the European Union, while EU9 refers to the new EU member countries (Bruinsma, personal communication, 2010).

Annex B. Global maps of growth in demand for livestock commodities from 2000 to 2030

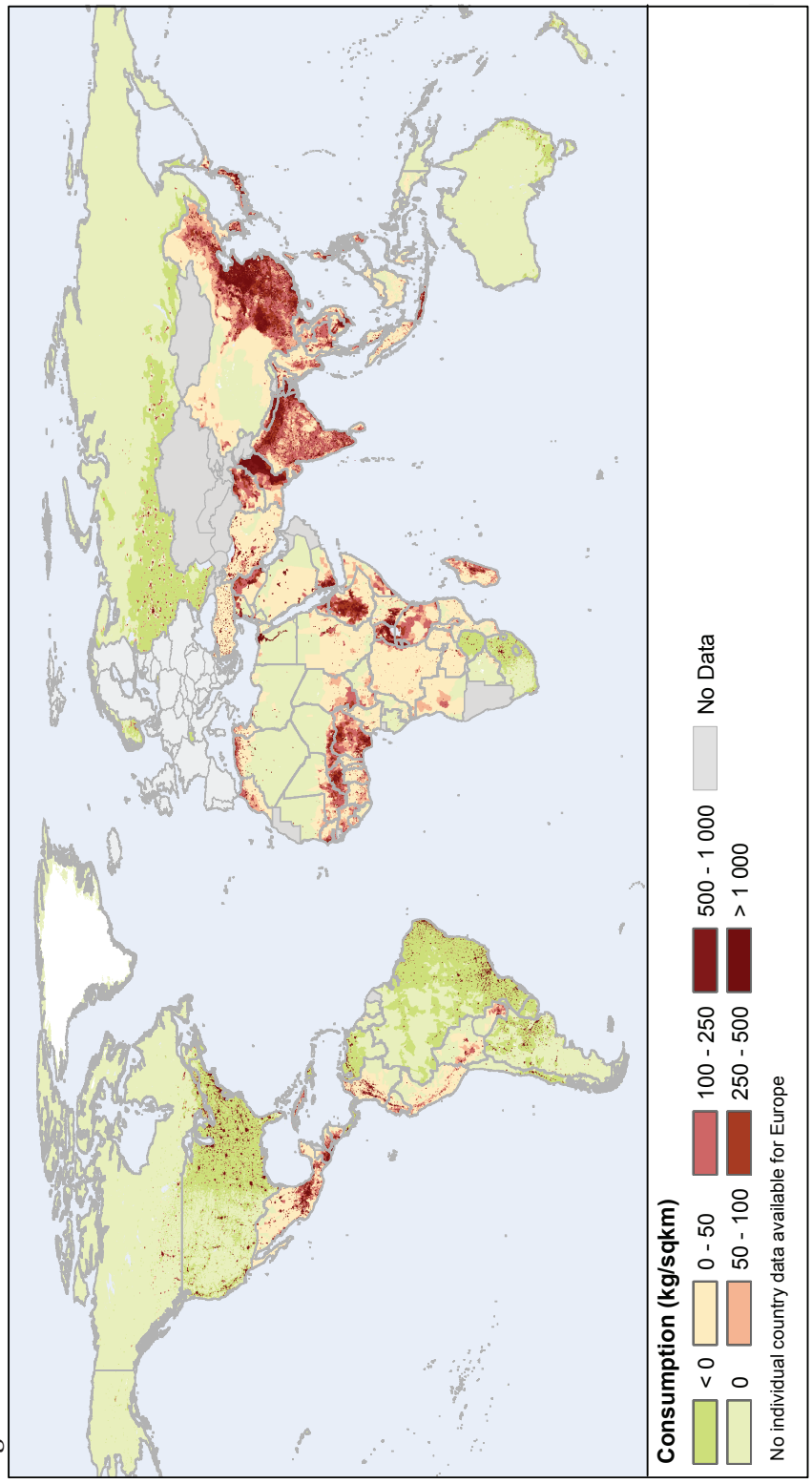

Figure B1. Growth in demand for beef from 2000 to 2030

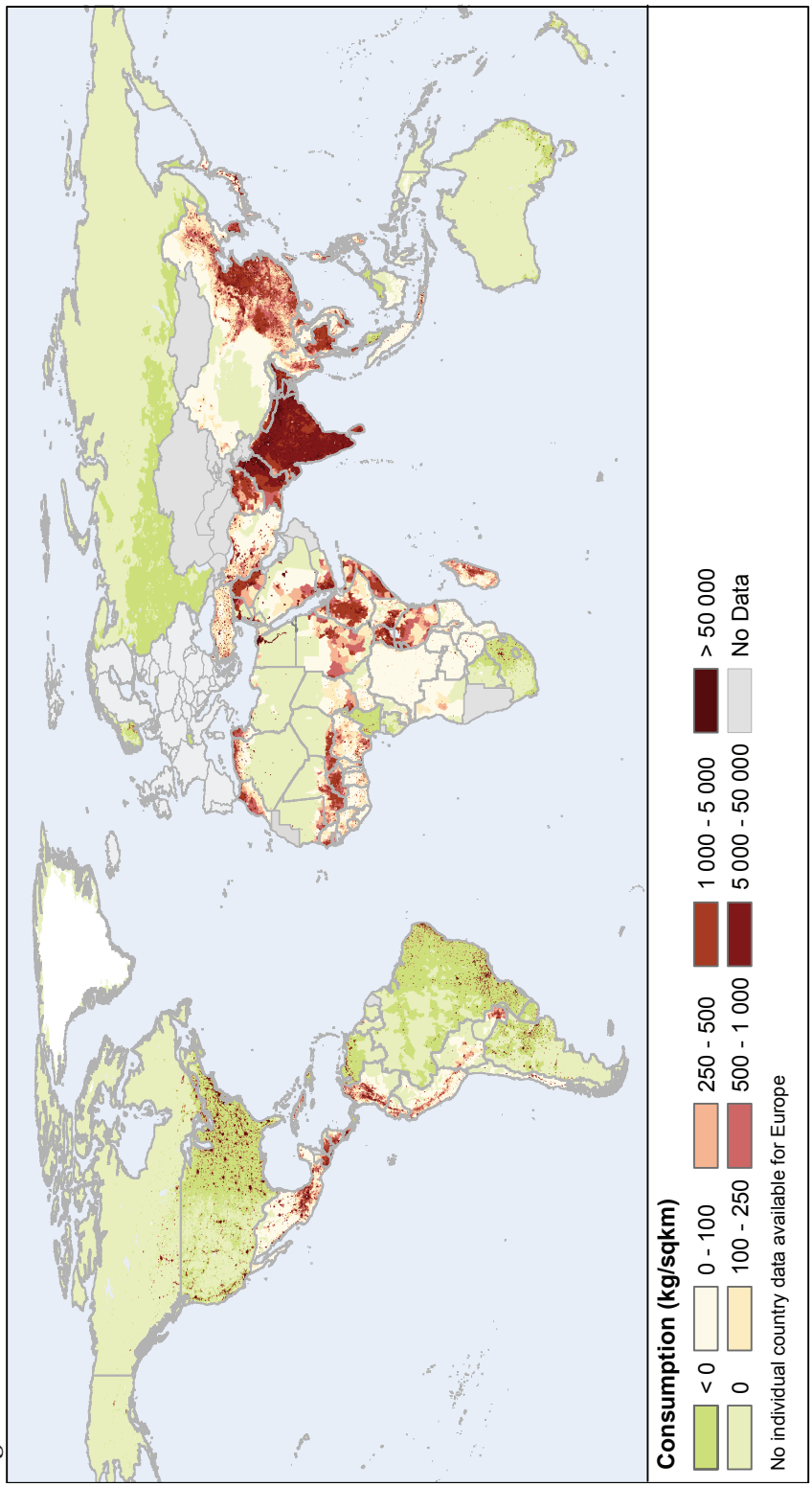

Figure B2. Growth in demand for milk from 2000 to 2030

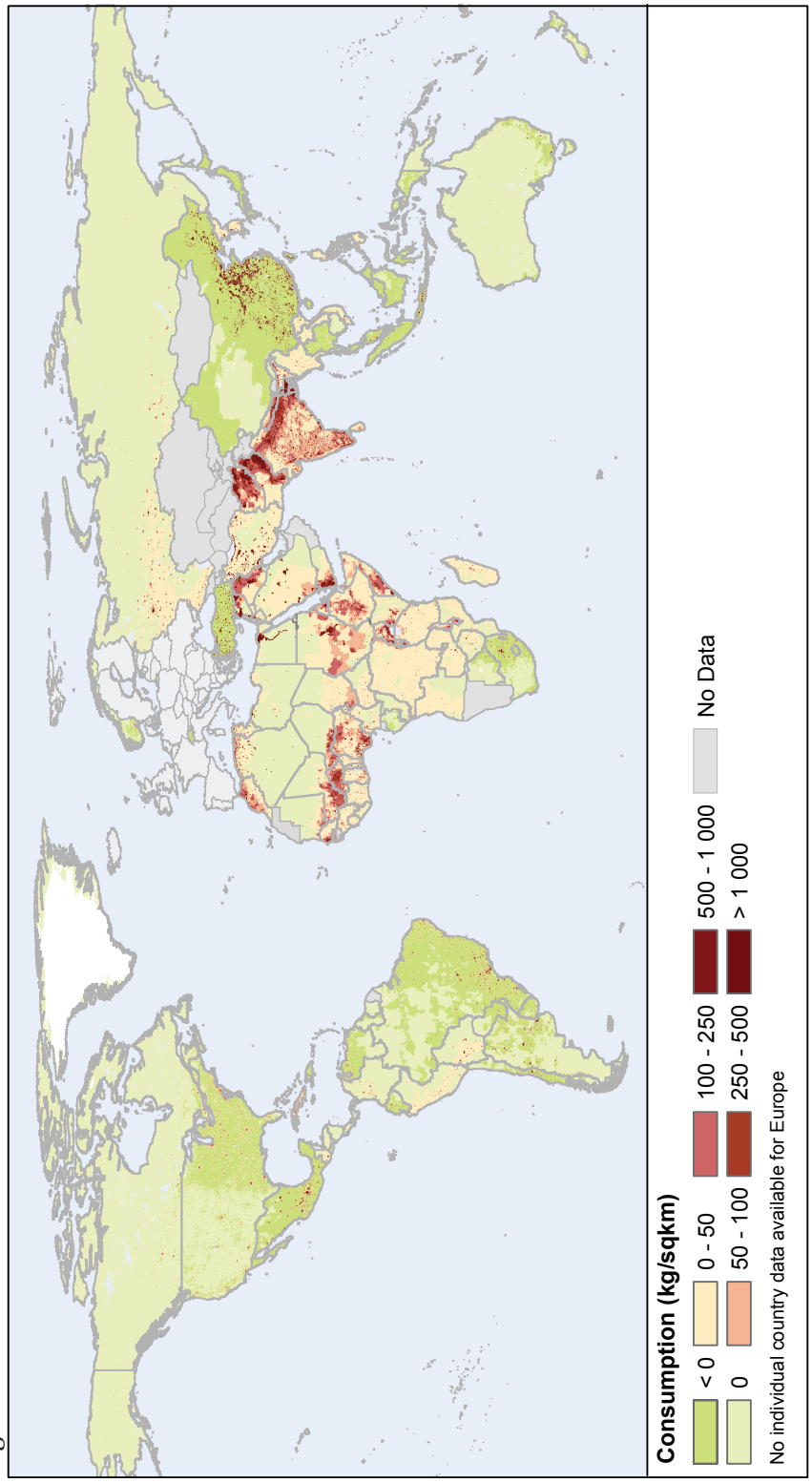

Figure B3. Growth in demand for mutton from 2000 to 2030

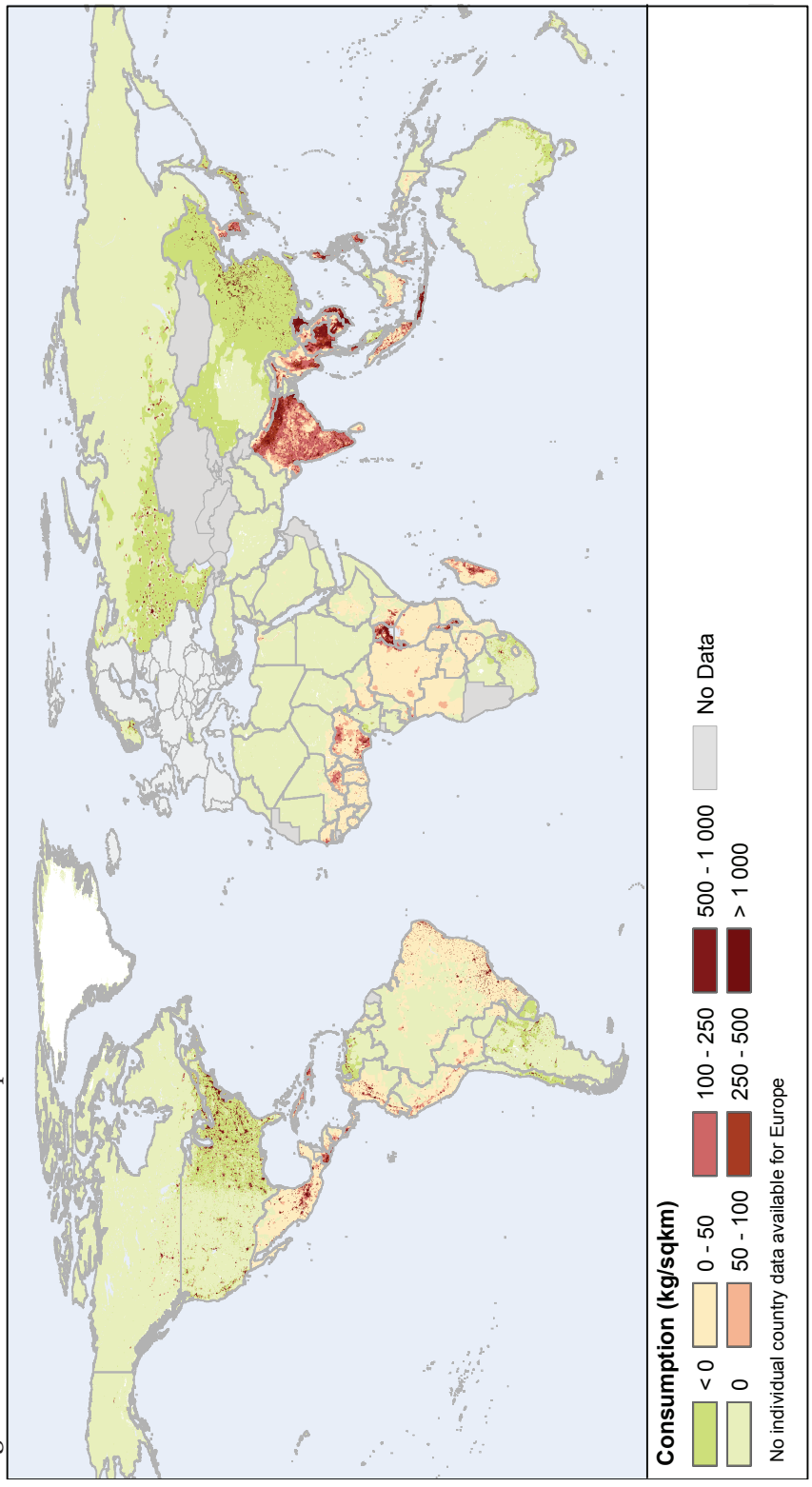

Figure B4. Growth in demand for pork from 2000 to 2030

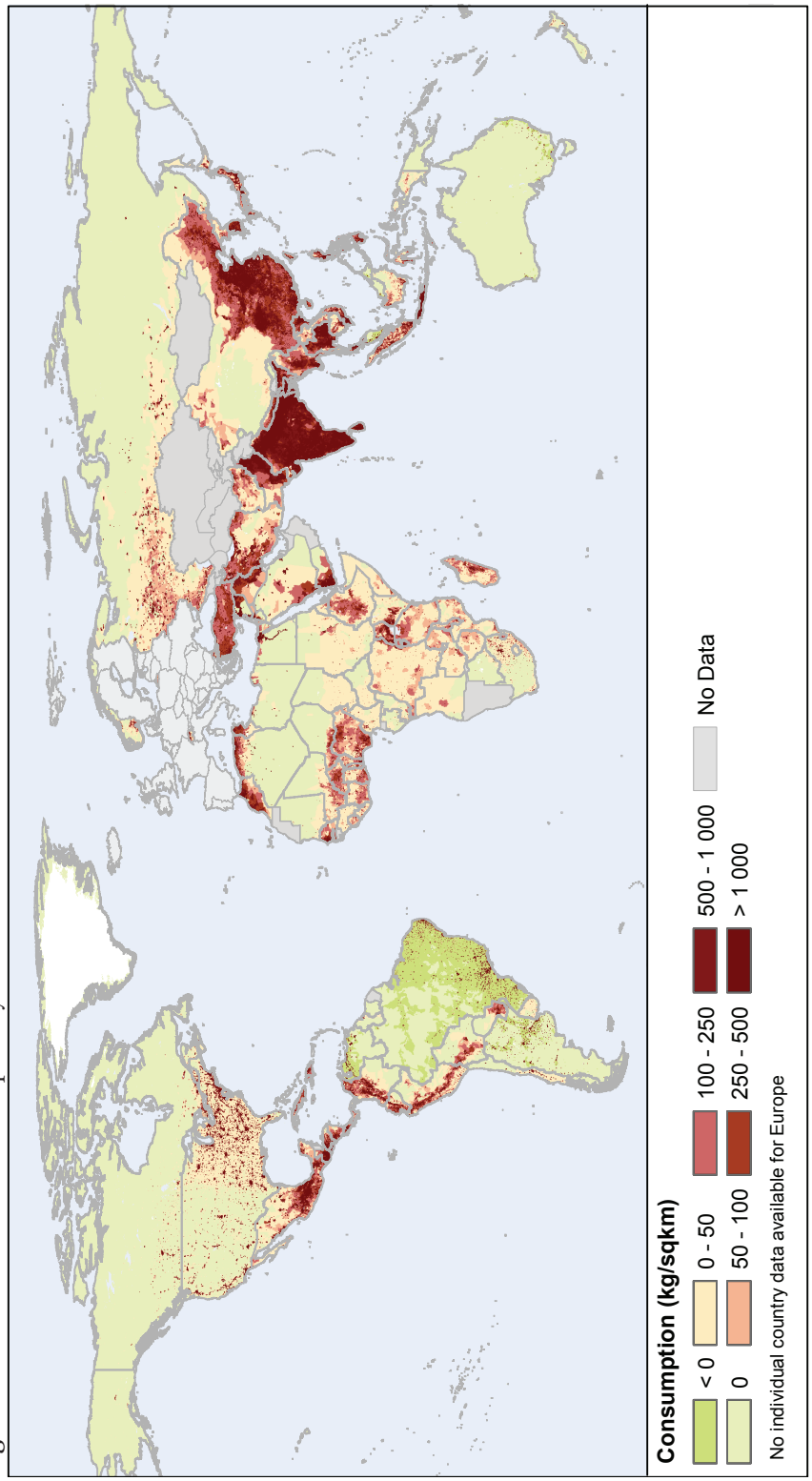

Figure B5. Growth in demand for poultry meat from 2000 to 2030

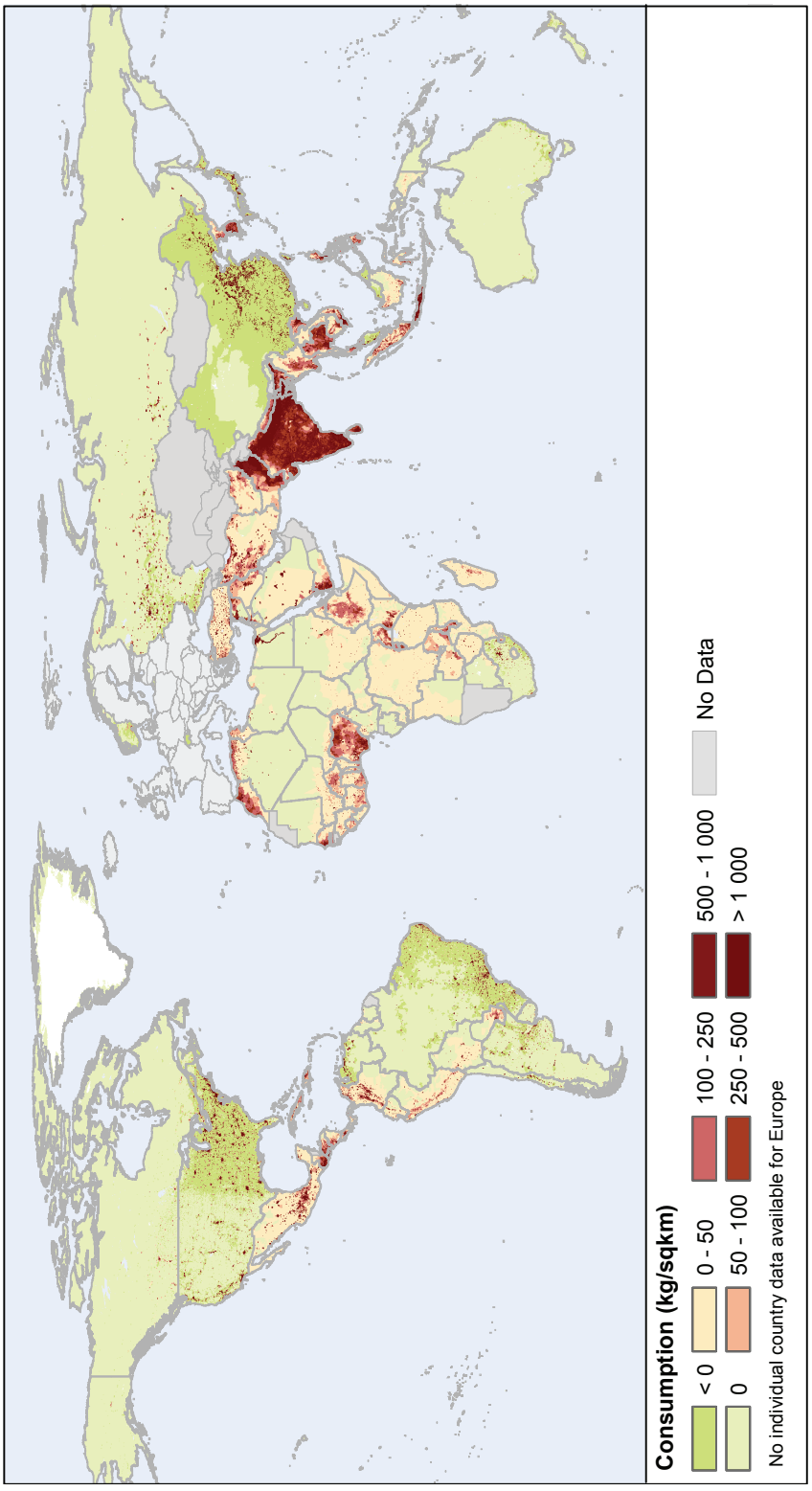

Figure B6. Growth in demand for eggs from 2000 to 2030

Annex C. Consumption and production of livestock commodities in 2000 and 2030

In this section we report country-level totals of consumption, production, import and export of the different livestock commodities (beef, milk, mutton, pork, poultry meat and eggs), in 2000 and 2030, and their absolute and proportional change. The consumption totals have been disaggregated by urban and rural areas based on the baseline 2000 GRUMP population distribution, and UN urban and rural proportions in 2000, and those projected in 2030. Absolute values have been summed at the regional level, while the proportional changes are expressed as a percentage of the total values in 2000.

Table C 1. Consumption and production of beef in 2000 and 2030 (all measures are in thousands of metric tonnes).

COUNTRY	BEEF 2000						BEEF 2030					
	Consumption			Production	Import	Export	Consumption			Production	Import	Export
	Urban	Rural	Total				Urban	Rural	Total			
East Asia and Pacific	**3 293.7**	**3 493.1**	**6 786.8**	**6 499.9**	**390.3**	**103.4**	**10 233.9**	**5 351.0**	**15 584.9**	**14 815.3**	**891.6**	**122.0**
Cambodia	12.7	52.9	65.6	67.1	0.0	1.6	61.0	100.6	161.6	161.6	0.0	0.0
China	2 647.8	2 585.8	5 233.6	5 298.2	9.0	73.6	8 031.6	4 090.3	12 121.9	12 221.9	0.0	100.0
Dem. People's Rep. of Korea	13.1	7.6	20.7	20.5	0.2	0.0	30.0	10.0	40.0	35.0	5.0	0.0
Indonesia	172.1	234.3	406.4	325.1	81.4	0.1	681.2	309.0	990.2	790.2	200.0	0.0
Lao People's Dem. Rep.	8.1	29.1	37.2	42.0	0.0	4.8	55.4	51.3	106.7	118.7	0.0	12.0
Malaysia	79.5	46.8	126.3	13.2	115.7	2.5	269.6	57.9	327.5	18.0	309.5	0.0
Myanmar	34.9	88.0	122.9	137.8	0.0	14.8	115.9	124.7	240.6	250.6	0.0	10.0
Philippines	208.5	148.5	357.0	216.8	140.4	0.2	683.4	212.6	896.0	646.0	250.0	0.0
Thailand	72.4	158.8	231.2	193.4	43.5	5.8	172.5	204.6	377.1	250.0	127.1	0.0
Viet Nam	44.6	141.3	185.9	185.8	0.1	0.0	133.1	190.2	323.3	323.3	0.0	0.0
Eastern Europe and Central Asia	**1 975.1**	**747.5**	**2 722.6**	**2 227.2**	**505.7**	**6.4**	**2 312.4**	**699.8**	**3 012.2**	**2 516.1**	**500.0**	**0.0**
Russian Federation	1 747.0	626.7	2 373.7	1 877.9	505.6	5.9	1 829.8	564.5	2 394.3	1 898.2	500.0	0.0
Turkey	228.1	120.8	348.9	349.3	0.1	0.5	482.5	135.4	617.9	617.9	0.0	0.0
Latin America/Caribbean	**10 034.0**	**2 659.7**	**12 693.7**	**13 713.8**	**658.9**	**1 456.8**	**17 284.9**	**2 710.8**	**19 995.7**	**23 031.2**	**707.2**	**3 413.2**
Argentina	1 991.6	174.5	2 166.1	2 631.6	16.8	310.6	2 506.8	118.2	2 625.0	3 711.3	0.0	845.7
Bolivia	104.1	55.4	159.5	158.7	1.3	0.7	251.2	73.3	324.5	324.5	0.0	0.0
Brazil	4 710.9	1 250.0	5 960.9	6 536.7	53.2	629.0	7 967.5	1 048.9	9 016.4	10 716.4	0.0	1 700.0
Chile	276.4	47.9	324.3	223.8	101.1	0.6	501.7	46.7	548.4	398.4	150.0	0.0

COUNTRY	BEEF 2000						BEEF 2030					
	Consumption			Production	Import	Export	Consumption			Production	Import	Export
	Urban	Rural	Total				Urban	Rural	Total			
Colombia	523.9	197.0	720.9	736.5	2.7	5.0	989.7	230.4	1 220.1	1 255.0	0.0	10.0
Costa Rica	40.5	27.1	67.6	82.2	2.3	16.9	69.8	24.2	94.0	114.0	0.0	20.0
Cuba	40.5	33.7	74.2	74.1	0.1	0.0	73.1	55.1	128.2	128.2	0.0	0.0
Dominican Republic	42.8	25.8	68.6	68.4	0.2	0.0	88.5	22.1	110.6	110.6	0.0	0.0
Ecuador	105.3	71.0	176.3	175.9	0.4	0.0	276.1	87.9	364.0	364.0	0.0	0.0
El Salvador	25.7	18.5	44.2	28.8	15.4	0.0	67.0	29.7	96.7	76.7	20.0	0.0
Guatemala	30.6	36.8	67.4	62.0	7.7	2.4	114.8	74.2	189.0	189.0	0.0	0.0
Guyana	0.6	1.3	1.9	1.9	0.0	0.0	1.0	1.4	2.4	2.4	0.0	0.0
Haiti	14.3	23.1	37.4	37.3	0.2	0.0	49.5	22.6	72.1	72.1	0.0	0.0
Honduras	24.7	29.5	54.2	52.9	2.9	1.6	71.8	45.5	117.3	117.3	0.0	0.0
Jamaica	10.8	9.9	20.7	14.0	7.0	0.2	19.0	11.4	30.4	19.6	11.0	0.0
Mexico	1 329.7	444.5	1 774.2	1 482.7	433.0	145.0	2 779.6	559.2	3 338.8	2 836.9	500.0	0.0
Nicaragua	14.4	11.6	26.0	61.7	2.6	38.6	57.8	29.7	87.5	170.0	0.0	82.5
Panama	37.2	19.1	56.3	63.8	1.0	7.0	78.1	16.5	94.6	101.8	0.0	5.0
Paraguay	110.2	91.0	201.2	247.5	1.5	47.8	262.7	109.2	371.9	421.9	0.0	50.0
Peru	80.9	24.1	105.0	135.6	3.3	0.0	197.0	44.6	241.6	258.5	10.0	0.0
Suriname	3.1	0.5	3.6	2.0	0.5	0.0	5.2	0.5	5.7	3.9	1.8	0.0
Uruguay	165.4	14.6	180.0	417.0	0.2	251.2	201.9	11.8	213.7	913.7	0.0	700.0
Venezuela	350.6	52.6	403.2	418.7	5.5	0.2	655.1	47.7	702.8	725.0	14.4	0.0
Middle East/North Africa	**908.9**	**814.0**	**1 722.9**	**1 259.4**	**478.0**	**2.7**	**2 314.7**	**1 337.6**	**3 652.3**	**2 830.7**	**823.0**	**0.0**
Algeria	99.3	42.1	141.4	126.0	15.5	0.0	279.9	60.4	340.3	305.3	35.0	0.0

COUNTRY	BEEF 2000						BEEF 2030					
	Consumption			Production	Import	Export	Consumption			Production	Import	Export
	Urban	Rural	Total				Urban	Rural	Total			
Egypt	350.7	478.9	829.6	494.9	335.0	0.3	755.4	772.2	1 527.6	1 200.0	327.6	0.0
Iran (Islamic Republic of)	204.4	111.3	315.7	287.3	28.4	0.0	516.7	144.4	661.1	621.1	40.0	0.0
Iraq	33.1	14.8	47.9	47.9	0.1	0.0	206.4	81.7	288.1	113.1	175.0	0.0
Jordan	20.2	5.6	25.8	0.7	26.8	1.6	39.4	8.7	48.1	1.0	47.1	0.0
Lebanon	30.4	4.7	35.1	10.0	49.8	0.1	72.3	7.5	79.8	12.0	69.2	0.0
Libyan Arab Jamahiriya	17.9	5.5	23.4	6.0	4.7	0.0	41.7	8.5	50.2	10.1	40.1	0.0
Morocco	75.1	65.7	140.8	138.2	2.8	0.6	163.5	84.7	248.2	233.2	15.0	0.0
Syrian Arab Republic	23.6	21.9	45.5	45.2	0.3	0.0	73.7	41.3	115.0	105.0	10.0	0.0
Tunisia	39.4	22.8	62.2	59.6	2.6	0.0	80.0	26.5	106.5	102.5	4.0	0.0
Yemen	14.9	40.6	55.5	43.6	12.0	0.1	85.7	101.7	187.4	127.4	60.0	0.0
South Asia	**1 130.1**	**2 890.5**	**4 020.6**	**4 255.4**	**0.9**	**235.7**	**3 160.0**	**4 227.6**	**7 387.6**	**7 687.6**	**0.0**	**300.0**
Afghanistan	32.9	94.9	127.8	127.8	0.0	0.0	164.6	248.3	412.9	412.9	0.0	0.0
Bangladesh	41.8	133.4	175.2	175.2	0.0	0.0	142.9	209.6	352.5	352.5	0.0	0.0
India	733.1	1 895.2	2 628.3	2 861.4	0.2	233.3	1 609.0	2 357.4	3 966.4	4 266.4	0.0	300.0
Nepal	22.8	146.9	169.7	170.0	0.6	0.9	99.3	226.6	325.9	325.9	0.0	0.0
Pakistan	293.9	592.2	886.1	887.5	0.0	1.4	1 134.6	1 152.0	2 286.6	2 286.6	0.0	0.0
Sri Lanka	5.6	27.9	33.5	33.5	0.1	0.1	9.6	33.7	43.3	43.3	0.0	0.0
Sub-Saharan Africa	**1 195.1**	**2 147.0**	**3 342.1**	**3 298.9**	**173.0**	**124.8**	**3 584.5**	**3 525.6**	**7 110.1**	**6 854.1**	**396.3**	**139.4**
Angola	55.6	45.9	101.5	85.0	16.5	0.0	220.2	74.3	294.5	279.3	15.2	0.0
Benin	7.1	11.4	18.5	16.8	1.7	0.0	21.3	18.6	39.9	36.9	3.0	0.0
Botswana	4.1	2.7	6.8	27.2	2.7	23.3	9.6	2.9	12.5	51.9	0.0	39.4

COUNTRY	BEEF 2000						BEEF 2030					
	Consumption			Production	Import	Export	Consumption			Production	Import	Export
	Urban	Rural	Total				Urban	Rural	Total			
Burkina Faso	10.8	43.1	53.9	69.2	0.2	15.5	64.0	117.4	181.4	211.4	0.0	30.0
Burundi	0.8	8.2	9.0	9.0	0.0	0.0	5.9	24.1	30.0	30.0	0.0	0.0
Cameroon	49.4	43.6	93.0	93.1	0.1	0.1	133.6	51.4	185.0	185.0	0.0	0.0
Central African Republic	24.6	34.9	59.5	57.0	3.4	0.9	56.2	53.8	110.0	107.5	2.5	0.0
Chad	20.7	55.4	76.1	86.8	0.0	10.7	84.8	110.1	194.9	204.9	0.0	10.0
Congo	2.3	1.8	4.1	1.6	2.5	0.0	9.4	4.2	13.6	4.6	9.0	0.0
Cote d'Ivoire	22.9	30.8	53.7	25.6	28.2	0.0	71.4	44.9	116.3	75.0	41.3	0.0
Dem. Rep. of the Congo	6.7	14.3	21.0	13.5	7.5	0.0	53.4	53.6	107.0	47.0	60.0	0.0
Eritrea	3.0	13.5	16.5	16.2	0.2	0.0	16.9	31.7	48.6	48.3	0.3	0.0
Ethiopia	48.6	247.3	295.9	295.9	0.0	0.1	184.9	462.3	647.2	647.2	0.0	0.0
Gabon	3.8	0.5	4.3	0.7	3.5	0.0	8.6	0.6	9.2	2.2	7.0	0.0
Gambia	1.9	1.5	3.4	3.3	0.0	0.0	5.8	1.9	7.7	7.2	0.5	0.0
Ghana	12.9	14.5	27.4	21.6	5.8	0.1	50.2	24.9	75.1	40.0	35.1	0.0
Guinea	12.0	20.5	32.5	33.1	0.7	1.4	46.6	41.4	88.0	88.0	0.0	0.0
Kenya	59.2	227.7	286.9	287.0	0.1	0.2	170.2	344.1	514.3	514.3	0.0	0.0
Lesotho	1.8	7.0	8.8	7.5	1.3	0.1	4.1	5.6	9.7	7.7	2.0	0.0
Liberia	1.1	0.9	2.0	0.8	1.2	0.0	4.0	1.5	5.5	2.6	2.9	0.0
Madagascar	44.2	105.4	149.6	149.6	0.0	0.0	130.3	170.9	301.2	301.2	0.0	0.0
Malawi	2.3	13.2	15.5	15.5	0.0	0.0	8.3	17.5	25.8	25.8	0.0	0.0
Mali	27.0	65.4	92.4	114.4	0.0	22.0	108.9	119.5	228.4	248.4	0.0	20.0
Mauritania	4.8	5.6	10.4	16.4	0.0	6.0	20.1	15.5	35.6	40.6	0.0	5.0

COUNTRY	BEEF 2000						BEEF 2030					
	Consumption			Production	Import	Export	Consumption			Production	Import	Export
	Urban	Rural	Total				Urban	Rural	Total			
Mauritius	5.4	3.4	8.8	0.5	8.9	0.6	8.5	4.3	12.8	0.5	12.3	0.0
Mozambique	12.5	26.9	39.4	37.4	2.0	0.0	43.2	36.7	79.9	77.9	2.0	0.0
Niger	6.7	34.3	41.0	44.9	0.1	4.0	28.5	92.8	121.3	126.3	0.0	5.0
Nigeria	149.2	191.7	340.9	285.1	55.8	0.0	688.3	386.5	1 074.8	924.8	150.0	0.0
Rwanda	3.2	15.0	18.2	18.1	0.1	0.0	13.4	29.7	43.1	43.1	0.0	0.0
Senegal	21.4	29.5	50.9	48.8	2.2	0.0	57.7	48.9	106.6	101.6	5.0	0.0
Sierra Leone	2.5	4.1	6.6	4.7	1.9	0.0	8.3	8.1	16.4	13.5	2.9	0.0
Somalia	21.0	39.1	60.1	70.2	0.0	10.1	98.2	94.2	192.4	202.4	0.0	10.0
South Africa	319.7	244.8	564.5	558.2	20.2	8.3	449.1	183.5	632.6	593.4	40.1	0.0
Sudan	112.7	180.2	292.9	298.5	0.3	5.9	361.1	225.9	587.0	592.0	0.0	5.0
Swaziland	4.5	13.5	18.0	14.6	5.1	1.6	7.3	12.1	19.4	14.4	5.0	0.0
Togo	2.3	3.1	5.4	5.2	0.3	0.0	8.4	5.4	13.8	13.6	0.2	0.0
Uganda	11.7	86.4	98.1	98.0	0.0	0.0	57.6	228.0	285.6	285.6	0.0	0.0
United Republic of Tanzania	49.7	173.7	223.4	223.4	0.1	0.1	174.9	280.3	455.2	455.2	0.0	0.0
Zambia	15.2	27.7	42.9	42.7	0.2	0.0	35.8	43.4	79.2	79.2	0.0	0.0
Zimbabwe	29.8	58.5	88.3	101.8	0.2	13.8	55.0	53.6	108.6	123.6	0.0	15.0
High income countries	**13 577.9**	**2 881.3**	**16 459.2**	**17 305.7**	**3 749.3**	**4 345.3**	**16 588.4**	**2 312.2**	**18 900.6**	**19 385.6**	**1 954.9**	**2 391.1**
Australia	680.8	97.7	778.5	2 259.4	5.9	1 486.9	821.9	71.8	893.7	2 192.1	0.0	1 300.0
Canada	882.1	151.4	1 033.5	1 616.6	366.2	947.0	1 079.9	140.4	1 220.3	1 711.5	0.0	491.1
Iceland	3.6	0.1	3.7	3.7	0.0	0.0	3.1	0.9	4.0	4.0	0.0	0.0
Israel	113.5	11.0	124.5	37.1	87.7	0.0	179.0	14.0	193.0	65.0	128.0	0.0

COUNTRY	BEEF 2000						BEEF 2030					
	Consumption			Production	Import	Export	Consumption			Production	Import	Export
	Urban	Rural	Total				Urban	Rural	Total			
Japan	796.2	413.2	1 209.4	503.2	909.0	2.5	1 334.1	481.2	1 815.3	761.2	1 100.0	0.0
New Zealand	99.9	15.4	115.3	575.9	11.0	485.7	110.1	13.3	123.4	723.4	0.0	600.0
Norway	75.6	16.7	92.3	90.2	5.6	3.5	81.8	17.4	99.2	99.2	0.0	0.0
Republic of Korea	434.5	107.4	541.9	291.2	260.5	9.8	778.2	122.5	900.7	650.7	250.0	0.0
Saudi Arabia	50.6	11.1	61.7	20.0	44.9	3.3	168.5	23.4	191.9	31.9	160.0	0.0
Switzerland	116.3	34.1	150.4	136.7	15.7	2.0	94.2	22.3	116.5	106.5	10.0	0.0
Trinidad and Tobago	1.1	4.8	5.9	0.9	6.0	1.0	2.5	5.8	8.3	1.4	6.9	0.0
United States of America	10 323.6	2 018.5	12 342.1	11 770.8	2 036.8	1 403.6	11 935.0	1 399.3	13 334.3	13 038.7	300.0	0.0

Table C 2. Change in consumption and production of beef between 2000 and 2030 (absolute change is in thousands of metric tonnes, proportional change in percentage).

COUNTRY	BEEF, CHANGE BETWEEN 2000 AND 2030													
	Consumption								Production		Import		Export	
	Absolute change			Percent change			Proportion of change due to change in consump. rates %	Proportion of change due to change in population %	Absolute change	Percent change	Absolute change	Percent change	Absolute change	Percent change
	Urban	Rural	Total	Urban	Rural	Total								
East Asia and Pacific	**6 940.2**	**1 857.9**	**8 798.1**	**210.7**	**53.2**	**129.6**			**8 315.4**	**127.9**	**501.3**	**128.4**	**18.6**	**18.0**
Cambodia	48.3	47.7	96.0	380.4	90.1	146.3	25.6	54.1	94.5	140.8	0.0		-1.6	-100.0
China	5 383.8	1 504.5	6 888.3	203.3	58.2	131.6	78.6	10.5	6 923.7	130.7	-9.0	-100.0	26.4	35.9
Dem. People's Rep. of Korea	16.9	2.4	19.3	129.6	31.0	93.2	77.5	13.0	14.5	70.7	4.8	2 400.0	0.0	
Indonesia	509.1	74.7	583.8	295.9	31.9	143.7	59.7	21.7	465.1	143.1	118.6	145.7	-0.1	-100.0
Lao People's Dem. Rep.	47.3	22.2	69.5	583.6	76.4	186.8	33.8	40.6	76.7	182.6	0.0		7.2	150.0
Malaysia	190.1	11.1	201.2	239.1	23.7	159.3	43.6	33.3	4.8	36.4	193.8	167.5	-2.5	-100.0
Myanmar	81.0	36.7	117.7	231.8	41.8	95.8	54.1	30.2	112.8	81.9	0.0		-4.8	-32.4
Philippines	474.9	64.1	539.0	227.8	43.2	151.0	44.4	33.3	429.2	198.0	109.6	78.1	-0.2	-100.0
Thailand	100.2	45.7	145.9	138.4	28.8	63.1	50.3	37.7	56.6	29.3	83.6	192.2	-5.8	-100.0
Viet Nam	88.5	48.9	137.4	198.4	34.6	73.9	34.4	52.3	137.5	74.0	-0.1	-100.0	0.0	
Eastern Europe and Central Asia	**337.3**	**-47.7**	**289.6**	**17.1**	**-6.4**	**10.6**			**288.9**	**13.0**	**-5.7**	**-1.1**	**-6.4**	**-100.0**
Russian Federation	82.8	-62.2	20.6	4.7	-9.9	0.9	2 612.0	-2 047.8	20.3	1.1	-5.6	-1.1	-5.9	-100.0
Turkey	254.4	14.6	269.0	111.6	12.1	77.1	40.9	44.9	268.6	76.9	-0.1	-100.0	-0.5	-100.0

COUNTRY	BEEF, CHANGE BETWEEN 2000 AND 2030													
	Consumption								Production		Import		Export	
	Absolute change			Percent change			Proportion of change due to change in consump. rates %	Proportion of change due to change in population %	Absolute change	Percent change	Absolute change	Percent change	Absolute change	Percent change
	Urban	Rural	Total	Urban	Rural	Total								
Latin America/Caribbean	**7 250.9**	**51.1**	**7 302.0**	**72.3**	**1.9**	**57.5**			**9 317.4**	**67.9**	**48.3**	**7.3**	**1 956.4**	**134.3**
Argentina	515.2	-56.3	458.9	25.9	-32.3	21.2	-35.8	146.9	1 079.7	41.0	-16.8	-100.0	535.1	172.3
Bolivia	147.2	17.8	165.0	141.4	32.2	103.4	26.5	57.6	165.8	104.5	-1.3	-100.0	-0.7	-100.0
Brazil	3 256.6	-201.1	3 055.5	69.1	-16.1	51.3	33.2	57.1	4 179.7	63.9	-53.2	-100.0	1 071.0	170.3
Chile	225.3	-1.2	224.1	81.5	-2.5	69.1	38.7	48.4	174.6	78.0	48.9	48.4	-0.6	-100.0
Colombia	465.7	33.5	499.2	88.9	17.0	69.2	24.8	64.2	518.5	70.4	-2.7	-100.0	5.0	100.0
Costa Rica	29.3	-2.9	26.4	72.4	-10.8	39.1	-17.9	126.8	31.8	38.7	-2.3	-100.0	3.1	18.3
Cuba	32.7	21.3	54.0	80.8	63.1	72.8	97.1	1.7	54.1	73.0	-0.1	-100.0	0.0	
Dominican Republic	45.6	-3.6	42.0	106.5	-14.0	61.2	31.5	57.4	42.2	61.7	-0.2	-100.0	0.0	
Ecuador	170.8	16.9	187.7	162.2	23.9	106.5	45.0	37.2	188.1	106.9	-0.4	-100.0	0.0	
El Salvador	41.3	11.2	52.5	160.4	60.8	118.8	45.7	35.2	47.9	166.3	4.6	29.9	0.0	
Guatemala	84.3	37.3	121.6	275.8	101.3	180.4	29.1	46.5	127.0	204.8	-7.7	-100.0	-2.4	-100.0
Guyana	0.3	0.2	0.5	54.3	12.3	26.3	144.2	-32.0	0.5	26.3	0.0		0.0	
Haiti	35.3	-0.6	34.7	247.2	-2.4	92.8	42.2	41.6	34.8	93.3	-0.2	-100.0	0.0	
Honduras	47.1	16.0	63.1	190.9	54.2	116.4	26.1	56.7	64.4	121.7	-2.9	-100.0	-1.6	-100.0
Jamaica	8.2	1.5	9.7	76.3	14.9	46.9	25.8	66.2	5.6	40.0	4.0	57.1	-0.2	-100.0
Mexico	1 449.9	114.7	1 564.6	109.0	25.8	88.2	44.6	39.7	1 354.2	91.3	67.0	15.5	-145.0	-100.0

COUNTRY	BEEF, CHANGE BETWEEN 2000 AND 2030													
	Consumption								Production		Import		Export	
	Absolute change			Percent change			Proportion of change due to change in consump. rates %	Proportion of change due to change in population %	Absolute change	Percent change	Absolute change	Percent change	Absolute change	Percent change
	Urban	Rural	Total	Urban	Rural	Total								
Nicaragua	43.5	18.0	61.5	302.3	155.2	236.5	38.6	32.1	108.3	175.5	-2.6	-100.0	43.9	113.7
Panama	40.9	-2.6	38.3	109.8	-13.6	68.0	14.4	77.9	38.0	59.6	-1.0	-100.0	-2.0	-28.6
Paraguay	152.6	18.1	170.7	138.5	19.9	84.8	2.7	95.2	174.4	70.5	-1.5	-100.0	2.2	4.6
Peru	116.1	20.5	136.6	143.5	85.2	130.1	46.6	33.2	122.9	90.6	6.7	203.0	0.0	
Suriname	2.1	0.0	2.1	66.8	5.2	58.3	64.5	25.8	1.9	95.0	1.3	260.0	0.0	
Uruguay	36.4	-2.7	33.7	22.0	-18.8	18.7	1.3	98.5	496.7	119.1	-0.2	-100.0	448.8	178.7
Venezuela	304.6	-5.0	299.6	86.9	-9.4	74.3	19.4	70.5	306.3	73.2	8.9	161.8	-0.2	-100.0
Middle East/North Africa	**1 405.7**	**523.7**	**1 929.4**	**154.7**	**64.3**	**112.0**			**1 571.3**	**124.8**	**345.0**	**72.2**	**-2.7**	**-100.0**
Algeria	180.7	18.2	198.9	182.0	43.3	140.7	46.2	32.6	179.3	142.3	19.5	125.8	0.0	
Egypt	404.6	293.4	698.0	115.4	61.3	84.1	17.1	72.4	705.1	142.5	-7.4	-2.2	-0.3	-100.0
Iran (Islamic Republic of)	312.4	33.0	345.4	152.9	29.7	109.4	43.3	38.5	333.8	116.2	11.6	40.8	0.0	
Iraq	173.3	66.9	240.2	523.1	453.0	501.5	41.5	19.0	65.2	136.1	174.9	174 900.0	0.0	
Jordan	19.2	3.1	22.3	95.2	54.9	86.4	10.0	82.9	0.3	42.9	20.3	75.7	-1.6	-100.0
Lebanon	41.9	2.8	44.7	137.7	60.2	127.4	53.8	27.4	2.0	20.0	19.4	39.0	-0.1	-100.0
Libyan Arab Jamahiriya	23.7	3.1	26.8	132.4	55.9	114.5	33.5	48.1	4.1	68.3	35.4	753.2	0.0	
Morocco	88.4	19.0	107.4	117.8	28.9	76.3	27.2	60.3	95.0	68.7	12.2	435.7	-0.6	-100.0
Syrian Arab Republic	50.2	19.3	69.5	213.1	88.0	152.7	29.9	48.2	59.8	132.3	9.7	3 233.3	0.0	

COUNTRY	BEEF, CHANGE BETWEEN 2000 AND 2030													
	Consumption								Production		Import		Export	
	Absolute change			Percent change			Proportion of change due to change in consump. rates %	Proportion of change due to change in population %	Absolute change	Percent change	Absolute change	Percent change	Absolute change	Percent change
	Urban	Rural	Total	Urban	Rural	Total								
Tunisia	40.5	3.8	44.3	102.9	16.5	71.2	44.9	41.8	42.9	72.0	1.4	53.8	0.0	
Yemen	70.8	61.1	131.9	475.8	150.4	237.7	8.6	76.0	83.8	192.2	48.0	400.0	-0.1	-100.0
South Asia	**2 029.9**	**1 337.1**	**3 367.0**	**179.6**	**46.3**	**83.7**			**3 432.2**	**80.7**	**-0.9**	**-100.0**	**64.3**	**27.3**
Afghanistan	131.6	153.5	285.1	399.5	161.8	223.1	17.3	59.6	285.1	223.1	0.0		0.0	
Bangladesh	101.2	76.1	177.3	242.3	57.0	101.2	25.7	59.0	177.3	101.2	0.0		0.0	
India	875.9	462.2	1 338.1	119.5	24.4	50.9	16.4	77.2	1 405.0	49.1	-0.2	-100.0	66.7	28.6
Nepal	76.5	79.7	156.2	335.3	54.3	92.0	11.8	79.5	155.9	91.7	-0.6	-100.0	-0.9	-100.0
Pakistan	840.7	559.8	1 400.5	286.0	94.5	158.1	22.5	57.2	1 399.1	157.6	0.0		-1.4	-100.0
Sri Lanka	4.0	5.8	9.8	71.4	20.7	29.3	37.3	56.5	9.8	29.3	-0.1	-100.0	-0.1	-100.0
Sub-Saharan Africa	**2 389.4**	**1 378.6**	**3 768.0**	**199.9**	**64.2**	**112.7**			**3 555.2**	**107.8**	**223.3**	**129.1**	**14.6**	**11.7**
Angola	164.7	28.3	193.0	296.4	61.7	190.1	13.6	68.7	194.3	228.6	-1.3	-7.9	0.0	
Benin	14.2	7.2	21.4	199.5	63.1	115.7	9.5	81.5	20.1	119.6	1.3	76.5	0.0	
Botswana	5.5	0.2	5.7	131.7	9.0	83.8	122.7	-11.2	24.7	90.8	-2.7	-100.0	16.1	69.1
Burkina Faso	53.2	74.3	127.5	493.1	172.3	236.5	18.4	56.8	142.2	205.5	-0.2	-100.0	14.5	93.5
Burundi	5.1	15.9	21.0	648.5	193.3	233.3	22.9	50.3	21.0	233.3	0.0		0.0	
Cameroon	84.2	7.8	92.0	170.3	18.0	98.9	38.6	44.5	91.9	98.7	-0.1	-100.0	-0.1	-100.0
Central African Republic	31.6	18.9	50.5	128.5	54.1	84.9	29.9	56.0	50.5	88.6	-0.9	-26.5	-0.9	-100.0

COUNTRY	BEEF, CHANGE BETWEEN 2000 AND 2030													
	Consumption								Production		Import		Export	
	Absolute change			Percent change			Proportion of change due to change in consump. rates %	Proportion of change due to change in population %	Absolute change	Percent change	Absolute change	Percent change	Absolute change	Percent change
	Urban	Rural	Total	Urban	Rural	Total								
Chad	64.1	54.7	118.8	309.2	98.8	156.1	8.7	80.3	118.1	136.1	0.0		-0.7	-6.5
Congo	7.1	2.4	9.5	304.7	135.4	231.7	22.1	51.5	3.0	187.5	6.5	260.0	0.0	
Cote d'Ivoire	48.5	14.1	62.6	211.5	45.9	116.6	40.6	40.3	49.4	193.0	13.1	46.5	0.0	
Dem. Rep. of the Congo	46.7	39.3	86.0	696.0	275.2	409.5	32.2	29.3	33.5	248.1	52.5	700.0	0.0	
Eritrea	13.9	18.2	32.1	459.3	135.3	194.5	19.4	58.5	32.1	198.1	0.1	50.0	0.0	
Ethiopia	136.3	215.0	351.3	280.7	86.9	118.7	10.8	79.1	351.3	118.7	0.0		-0.1	-100.0
Gabon	4.8	0.1	4.9	127.7	13.7	114.0	27.7	54.9	1.5	214.3	3.5	100.0	0.0	
Gambia	3.8	0.5	4.3	198.1	31.1	126.5	21.4	61.8	3.9	118.2	0.5		0.0	
Ghana	37.3	10.4	47.7	288.4	72.1	174.1	37.1	38.3	18.4	85.2	29.3	505.2	-0.1	-100.0
Guinea	34.6	20.9	55.5	287.3	102.2	170.8	27.7	49.1	54.9	165.9	-0.7	-100.0	-1.4	-100.0
Kenya	111.0	116.4	227.4	187.7	51.1	79.3	41.7	43.8	227.3	79.2	-0.1	-100.0	-0.2	-100.0
Lesotho	2.3	-1.4	0.9	126.8	-20.0	10.2	258.0	-125.0	0.2	2.7	0.7	53.8	-0.1	-100.0
Liberia	2.9	0.6	3.5	262.7	68.2	175.0	10.4	75.7	1.8	225.0	1.7	141.7	0.0	
Madagascar	86.1	65.5	151.6	194.9	62.1	101.3	27.2	60.3	151.6	101.3	0.0		0.0	
Malawi	6.0	4.3	10.3	254.5	32.9	66.5	-7.0	112.2	10.3	66.5	0.0		0.0	
Mali	81.9	54.1	136.0	304.0	82.6	147.2	-0.3	100.8	134.0	117.1	0.0		-2.0	-9.1
Mauritania	15.3	9.9	25.2	319.5	176.2	242.3	26.9	44.2	24.2	147.6	0.0		-1.0	-16.7

COUNTRY	BEEF, CHANGE BETWEEN 2000 AND 2030													
	Consumption								Production		Import		Export	
	Absolute change			Percent change			Proportion of change due to change in consump. rates %	Proportion of change due to change in population %	Absolute change	Percent change	Absolute change	Percent change	Absolute change	Percent change
	Urban	Rural	Total	Urban	Rural	Total								
Mauritius	3.2	0.8	4.0	58.8	24.6	45.5	43.4	47.3	0.0	0.0	3.4	38.2	-0.6	-100.0
Mozambique	30.8	9.7	40.5	247.2	36.1	102.8	35.1	47.7	40.5	108.3	0.0	0.0	0.0	
Niger	21.8	58.5	80.3	325.9	170.5	195.9	2.5	93.1	81.4	181.3	-0.1	-100.0	1.0	25.0
Nigeria	539.1	194.8	733.9	361.3	101.7	215.3	34.9	37.2	639.7	224.4	94.2	168.8	0.0	
Rwanda	10.2	14.7	24.9	320.2	97.7	136.8	25.5	55.2	25.0	138.1	-0.1	-100.0	0.0	
Senegal	36.3	19.4	55.7	169.7	65.8	109.4	14.8	73.3	52.8	108.2	2.8	127.3	0.0	
Sierra Leone	5.8	4.0	9.8	231.4	97.7	148.5	22.9	57.5	8.8	187.2	1.0	52.6	0.0	
Somalia	77.1	55.2	132.3	366.9	141.2	220.1	6.6	81.6	132.2	188.3	0.0		-0.1	-1.0
South Africa	129.5	-61.4	68.1	40.5	-25.1	12.1	139.8	-34.0	35.2	6.3	19.9	98.5	-8.3	-100.0
Sudan	248.4	45.7	294.1	220.4	25.4	100.4	24.6	60.4	293.5	98.3	-0.3	-100.0	-0.9	-15.3
Swaziland	2.9	-1.5	1.4	64.6	-10.9	7.8	131.2	-28.4	-0.2	-1.4	-0.1	-2.0	-1.6	-100.0
Togo	6.2	2.2	8.4	270.8	71.4	155.6	27.9	50.2	8.4	161.5	-0.1	-33.3	0.0	
Uganda	45.9	141.6	187.5	391.9	163.9	191.1	3.7	90.1	187.6	191.4	0.0		0.0	
United Republic of Tanzania	125.2	106.6	231.8	252.1	61.3	103.8	23.8	61.1	231.8	103.8	-0.1	-100.0	-0.1	-100.0
Zambia	20.6	15.7	36.3	135.4	56.7	84.6	31.0	54.6	36.5	85.5	-0.2	-100.0	0.0	
Zimbabwe	25.3	-5.0	20.3	84.8	-8.5	23.0	94.4	4.6	21.8	21.4	-0.2	-100.0	1.2	8.7
High income countries	**3 010.5**	**-569.1**	**2 441.4**	**22.2**	**-19.8**	**14.8**			**2 079.9**	**12.0**	**-1 794.4**	**-47.9**	**-1 954.2**	**-45.0**

COUNTRY	BEEF, CHANGE BETWEEN 2000 AND 2030													
	Consumption								Production		Import		Export	
	Absolute change			Percent change			Proportion of change due to change in consump. rates %	Proportion of change due to change in population %	Absolute change	Percent change	Absolute change	Percent change	Absolute change	Percent change
	Urban	Rural	Total	Urban	Rural	Total								
Australia	141.1	-25.9	115.2	20.7	-26.5	14.8	-52.4	165.2	-67.3	-3.0	-5.9	-100.0	-186.9	-12.6
Canada	197.8	-11.0	186.8	22.4	-7.2	18.1	-9.8	111.7	94.9	5.9	-366.2	-100.0	-455.9	-48.1
Iceland	-0.5	0.8	0.3	-13.2	546.7	8.1	-93.9	209.9	0.3	8.1	0.0		0.0	
Israel	65.5	3.0	68.5	57.7	27.2	55.0	8.0	88.1	27.9	75.2	40.3	46.0	0.0	
Japan	537.9	68.0	605.9	67.6	16.5	50.1	114.9	-9.4	258.0	51.3	191.0	21.0	-2.5	-100.0
New Zealand	10.2	-2.1	8.1	10.2	-13.7	7.0	-130.4	253.6	147.5	25.6	-11.0	-100.0	114.3	23.5
Norway	6.2	0.7	6.9	8.2	4.1	7.5	-29.0	131.9	9.0	10.0	-5.6	-100.0	-3.5	-100.0
Republic of Korea	343.6	15.2	358.8	79.1	14.1	66.2	83.9	10.4	359.5	123.5	-10.5	-4.0	-9.8	-100.0
Saudi Arabia	117.9	12.3	130.2	232.8	111.3	211.0	28.2	45.0	11.9	59.5	115.1	256.3	-3.3	-100.0
Switzerland	-22.1	-11.8	-33.9	-19.0	-34.7	-22.5	73.3	32.0	-30.2	-22.1	-5.7	-36.3	-2.0	-100.0
Trinidad and Tobago	1.4	1.0	2.4	128.6	20.3	40.7	90.1	7.2	0.5	55.6	0.9	15.0	-1.0	-100.0
United States of America	1 611.4	-619.2	992.2	15.6	-30.7	8.0	-209.8	372.7	1 267.9	10.8	-1 736.8	-85.3	-1 403.6	-100.0

Table C 3. Consumption and production of milk in 2000 and 2030 (all measures are in thousands of metric tonnes).

COUNTRY	MILK 2000						MILK 2030					
	Consumption			Production	Import	Export	Consumption			Production	Import	Export
	Urban	Rural	Total				Urban	Rural	Total			
East Asia and Pacific	**8 724.8**	**9 251.3**	**17 976.1**	**14 474.5**	**6 080.5**	**778.4**	**27 201.9**	**14 539.1**	**41 741.0**	**36 307.3**	**9 438.9**	**0.0**
Cambodia	8.7	35.8	44.5	20.4	25.3	0.0	44.5	73.2	117.7	40.0	80.6	0.0
China	5 656.6	5 503.4	11 160.0	12 325.9	599.9	202.9	17 953.3	9 142.7	27 096.0	29 613.4	893.2	0.0
Dem. People's Rep. of Korea	53.8	31.1	84.9	89.3	0.0	0.0	111.6	38.2	149.8	155.1	0.2	0.0
Indonesia	688.4	936.7	1 625.1	768.6	1 187.4	243.3	2 200.9	991.8	3 192.7	2 441.3	1 009.6	0.0
Lao People's Dem. Rep.	4.9	17.4	22.3	5.9	16.8	0.0	33.2	30.2	63.4	21.0	53.9	0.0
Malaysia	725.2	426.0	1 151.2	37.1	1 334.9	135.0	1 795.2	383.8	2 179.0	90.8	2 279.7	0.0
Myanmar	197.9	496.8	694.7	619.3	120.1	0.0	641.6	688.8	1 330.4	1 188.0	201.7	0.0
Philippines	885.6	629.1	1 514.7	10.3	1 605.9	59.1	2 431.4	754.9	3 186.3	20.7	3 170.0	0.0
Thailand	430.2	942.9	1 373.1	516.3	963.4	138.1	1 658.1	1 962.3	3 620.4	2 474.9	1 200.0	0.0
Viet Nam	73.6	232.0	305.6	81.4	226.8	0.0	332.0	473.3	805.3	262.1	550.0	0.0
Eastern Europe and Central Asia	**21 352.7**	**8 561.4**	**29 914.1**	**42 307.8**	**1 450.2**	**1 139.5**	**26 422.8**	**7 855.3**	**34 278.1**	**47 554.2**	**424.5**	**0.0**
Russian Federation	16 116.7	5 803.8	21 920.5	32 517.3	1 371.8	1 120.5	16 011.0	4 938.7	20 949.7	31 649.0	250.1	0.0
Turkey	5 236.0	2 757.6	7 993.6	9 790.5	78.4	19.0	10 411.8	2 916.6	13 328.4	15 905.2	174.4	0.0
Latin America/Caribbean	**43 096.7**	**12 514.4**	**55 611.1**	**58 054.3**	**7 054.6**	**2 601.1**	**81 393.4**	**14 035.2**	**95 428.6**	**102 050.1**	**7 695.0**	**3 505.0**
Argentina	7 585.2	664.2	8 249.4	10 212.1	90.6	1 431.3	11 335.2	535.8	11 871.0	15 290.2	0.0	2 501.9
Bolivia	194.0	98.4	292.4	251.1	82.3	20.8	540.1	150.2	690.3	682.7	51.7	0.0
Brazil	15 420.6	4 087.3	19 507.9	20 535.7	1 429.1	37.1	29 436.7	3 875.0	33 311.7	36 174.3	803.3	0.0
Chile	1 462.8	253.2	1 716.0	2 086.9	168.2	139.8	2 973.1	276.6	3 249.7	3 940.1	55.1	0.0

COUNTRY	MILK 2000						MILK 2030					
	Consumption			Production	Import	Export	Consumption			Production	Import	Export
	Urban	Rural	Total				Urban	Rural	Total			
Colombia	3 360.9	1 263.0	4 623.9	5 701.6	124.7	112.9	7 154.7	1 667.5	8 822.2	10 605.2	5.8	0.0
Costa Rica	398.5	266.6	665.1	758.5	32.5	42.4	938.4	324.1	1 262.5	1 320.5	0.0	8.7
Cuba	559.9	466.5	1 026.4	617.5	439.7	0.0	776.8	583.8	1 360.6	1 079.8	321.7	0.0
Dominican Republic	313.1	188.1	501.2	406.3	115.7	0.0	662.4	165.3	827.7	603.6	251.8	0.0
Ecuador	719.8	484.9	1 204.7	2 064.5	10.7	5.6	1 775.6	564.6	2 340.2	4 059.1	0.0	4.4
El Salvador	315.2	225.8	541.0	379.8	186.4	5.5	721.9	319.8	1 041.7	871.9	204.8	0.0
Guatemala	211.8	254.5	466.3	262.7	205.3	2.3	600.3	386.8	987.1	587.1	400.0	0.0
Guyana	22.2	46.2	68.4	30.0	38.4	0.0	40.3	60.4	100.7	80.7	20.0	0.0
Haiti	49.8	80.8	130.6	63.0	70.3	0.0	157.9	71.7	229.6	107.9	126.5	0.0
Honduras	316.7	378.7	695.4	575.8	125.8	5.9	872.3	552.8	1 425.1	1 345.4	80.0	0.0
Jamaica	57.8	53.3	111.1	28.4	94.9	9.9	104.0	62.5	166.5	43.9	125.0	0.0
Mexico	8 267.8	2 764.1	11 031.9	9 354.4	2 774.0	123.4	15 802.4	3 166.3	18 968.7	16 541.6	3 580.2	0.0
Nicaragua	103.2	83.2	186.4	234.4	54.2	107.3	378.9	193.9	572.8	580.3	0.0	0.0
Panama	132.7	67.7	200.4	170.8	59.1	17.5	309.8	64.9	374.7	325.7	50.0	0.0
Paraguay	203.7	167.7	371.4	368.6	22.6	1.4	647.2	268.1	915.3	915.6	30.9	0.0
Peru	1 016.3	300.7	1 317.0	1 084.8	273.7	8.1	2 033.4	457.0	2 490.4	2 296.1	270.7	0.0
Suriname	23.5	3.7	27.2	13.2	9.5	0.0	31.9	3.2	35.1	19.1	17.5	0.0
Uruguay	604.5	53.2	657.7	1 465.4	5.5	524.7	822.5	48.3	870.8	2 315.6	0.0	990.0
Venezuela	1 756.6	262.7	2 019.3	1 388.8	641.4	5.2	3 277.3	236.9	3 514.2	2 263.7	1 300.0	0.0
Middle East/North Africa	**9 591.2**	**6 598.9**	**16 190.1**	**16 271.7**	**3 785.2**	**137.3**	**23 570.8**	**10 532.6**	**34 103.4**	**33 022.7**	**7 785.9**	**0.0**
Algeria	2 294.7	971.7	3 266.4	1 478.2	1 862.2	0.0	4 965.6	1 068.9	6 034.5	3 671.1	2 500.0	0.0

COUNTRY	MILK 2000						MILK 2030					
	Consumption			Production	Import	Export	Consumption			Production	Import	Export
	Urban	Rural	Total				Urban	Rural	Total			
Egypt	1 444.7	1 970.7	3 415.4	3 842.8	377.2	27.6	3 425.1	3 501.4	6 926.5	7 675.2	700.7	0.0
Iran (Islamic Republic of)	2 489.1	1 355.2	3 844.3	5 807.4	61.6	20.8	5 684.2	1 587.8	7 272.0	10 441.7	283.3	0.0
Iraq	434.0	192.8	626.8	534.6	141.2	0.0	2 520.0	994.6	3 514.6	1 966.5	1 735.7	0.0
Jordan	264.8	73.5	338.3	195.3	171.5	18.6	610.8	134.4	745.2	550.3	215.7	0.0
Lebanon	358.8	55.4	414.2	208.2	357.2	2.1	573.9	59.6	633.5	449.5	400.0	0.0
Libyan Arab Jamahiriya	284.1	86.0	370.1	207.6	193.8	0.0	588.1	119.0	707.1	477.4	247.1	0.0
Morocco	532.2	464.5	996.7	1 215.7	137.5	45.1	1 242.5	640.8	1 883.3	2 223.9	215.7	0.0
Syrian Arab Republic	749.7	695.8	1 445.5	1 635.6	92.6	9.6	1 935.2	1 083.5	3 018.7	3 392.5	187.1	0.0
Tunisia	595.9	343.8	939.7	918.3	71.1	10.6	1 237.7	410.4	1 648.1	1 617.3	100.6	0.0
Yemen	143.3	389.4	532.7	228.0	319.3	2.9	787.7	932.2	1 719.9	557.3	1 200.0	0.0
South Asia	**27 178.8**	**67 032.3**	**94 211.1**	**115 236.5**	**989.3**	**291.5**	**91 261.4**	**121 892.1**	**213 153.5**	**256 588.6**	**2 216.6**	**0.0**
Afghanistan	388.3	1 116.5	1 504.8	1 661.8	3.6	0.0	1 593.9	2 405.0	3 998.9	4 400.8	23.8	0.0
Bangladesh	458.9	1 464.9	1 923.8	2 115.7	333.9	0.2	1 959.1	2 839.7	4 798.8	5 361.1	661.9	0.0
India	18 564.6	47 882.7	66 447.3	81 626.6	68.0	289.3	59 327.0	86 450.4	145 777.4	178 407.8	233.0	0.0
Nepal	126.3	808.1	934.4	1 172.0	14.8	0.0	650.7	1 475.9	2 126.6	2 622.9	22.0	0.0
Pakistan	7 514.1	15 134.3	22 648.4	28 364.6	91.0	0.8	27 478.5	27 846.4	55 324.9	65 297.1	616.6	0.0
Sri Lanka	126.5	625.9	752.4	295.8	478.0	1.2	252.2	874.7	1 126.9	498.9	659.3	0.0
Sub-Saharan Africa	**6 850.1**	**12 678.7**	**19 528.8**	**19 116.9**	**2 261.3**	**321.8**	**20 279.1**	**20 189.0**	**40 468.1**	**39 507.1**	**3 649.3**	**140.8**
Angola	111.9	92.4	204.3	193.7	22.3	0.0	449.0	151.4	600.4	576.7	49.5	0.0
Benin	24.9	39.7	64.6	29.0	37.2	0.2	85.0	73.4	158.4	87.0	75.0	0.0
Botswana	134.9	87.2	222.1	104.1	154.4	0.5	175.0	52.9	227.9	159.8	119.6	0.0

COUNTRY	MILK 2000						MILK 2030					
	Consumption			Production	Import	Export	Consumption			Production	Import	Export
	Urban	Rural	Total				Urban	Rural	Total			
Burkina Faso	51.3	204.2	255.5	221.0	50.1	0.7	266.4	487.2	753.6	777.6	9.9	0.0
Burundi	2.9	29.9	32.8	29.3	5.0	0.0	27.0	109.5	136.5	111.0	30.0	0.0
Cameroon	121.2	106.7	227.9	184.0	56.4	3.3	267.4	102.5	369.9	332.1	50.0	0.0
Central African Republic	25.4	35.9	61.3	62.8	1.7	0.0	70.0	66.9	136.9	138.6	3.1	0.0
Chad	56.4	150.4	206.8	219.8	4.7	0.0	239.3	310.1	549.4	581.1	5.5	0.0
Congo	20.8	15.6	36.4	1.0	35.5	0.1	83.9	37.0	120.9	3.0	117.9	0.0
Cote d'Ivoire	49.1	65.7	114.8	24.7	137.0	53.2	142.8	89.8	232.6	74.5	160.0	0.0
Dem. Rep. of the Congo	12.9	27.1	40.0	5.2	35.0	0.0	80.7	79.8	160.5	61.4	100.0	0.0
Eritrea	14.2	63.6	77.8	67.9	13.3	0.0	67.8	127.4	195.2	176.5	25.1	0.0
Ethiopia	206.7	1 052.4	1 259.1	1 304.7	7.8	0.0	888.7	2 217.4	3 106.1	3 177.5	59.8	0.0
Gabon	34.5	4.7	39.2	1.6	37.8	0.0	75.4	5.1	80.5	6.2	74.7	0.0
Gambia	19.0	14.3	33.3	7.6	26.2	0.1	49.2	16.3	65.5	26.3	40.0	0.0
Ghana	55.2	61.1	116.3	34.2	84.9	1.0	185.5	92.0	277.5	131.6	150.0	0.0
Guinea	39.3	66.6	105.9	79.0	31.0	0.2	122.8	108.5	231.3	188.9	50.0	0.0
Kenya	531.4	2 042.5	2 573.9	2 705.9	25.9	2.8	1 322.5	2 668.1	3 990.6	4 146.2	24.2	0.0
Lesotho	5.8	22.0	27.8	23.5	6.0	0.0	14.4	19.3	33.7	29.1	6.0	0.0
Liberia	4.1	3.4	7.5	0.7	6.8	0.0	17.4	6.5	23.9	2.0	22.0	0.0
Madagascar	155.0	369.3	524.3	533.3	18.3	0.2	519.6	681.1	1 200.7	1 197.7	46.2	0.0
Malawi	6.4	35.7	42.1	34.7	9.2	0.1	23.6	49.8	73.4	48.6	27.2	0.0
Mali	162.5	392.6	555.1	500.2	65.4	0.0	717.3	785.0	1 502.3	1 380.8	150.0	0.0
Mauritania	160.6	187.7	348.3	320.6	45.1	0.1	418.5	321.6	740.1	694.7	70.7	0.0

COUNTRY	MILK 2000						MILK 2030					
	Consumption			Production	Import	Export	Consumption			Production	Import	Export
	Urban	Rural	Total				Urban	Rural	Total			
Mauritius	78.7	50.1	128.8	4.8	126.6	1.6	123.0	61.5	184.5	4.9	181.0	0.0
Mozambique	30.9	66.4	97.3	68.7	32.4	0.0	108.1	91.5	199.6	176.2	30.0	0.0
Niger	52.7	269.4	322.1	307.6	37.8	2.3	207.4	672.4	879.8	827.5	91.2	0.0
Nigeria	423.9	544.2	968.1	408.6	661.5	2.2	1 352.7	755.6	2 108.3	922.2	1 405.4	0.0
Rwanda	18.8	88.3	107.1	100.6	11.5	0.0	96.5	212.9	309.4	308.1	11.5	0.0
Senegal	116.1	159.8	275.9	142.3	147.8	7.3	293.4	248.2	541.6	335.6	220.0	0.0
Sierra Leone	10.8	17.5	28.3	21.2	8.1	0.0	33.4	32.2	65.6	47.8	20.0	0.0
Somalia	554.6	1 029.4	1 584.0	2 194.5	6.6	0.0	2 317.4	2 222.1	4 539.5	5 425.3	30.3	0.0
South Africa	1 364.3	1 043.8	2 408.1	2 557.0	149.1	175.7	2 096.0	855.9	2 951.9	3 210.2	0.0	100.2
Sudan	1 822.6	2 911.4	4 734.0	4 893.0	45.0	0.0	6 064.4	3 788.0	9 852.4	10 208.6	68.8	0.0
Swaziland	18.7	56.6	75.3	36.3	54.6	11.3	32.2	52.9	85.1	59.5	35.1	0.0
Togo	8.7	11.8	20.5	9.0	14.3	5.4	27.3	17.3	44.6	18.5	23.0	0.0
Uganda	58.7	429.5	488.2	510.4	2.4	0.5	297.7	1 173.2	1 470.9	1 502.3	21.6	0.0
United Republic of Tanzania	179.3	626.4	805.7	804.4	24.4	1.1	700.6	1 120.3	1 820.9	1 840.4	30.0	0.0
Zambia	24.8	45.1	69.9	63.3	12.0	1.9	51.7	62.5	114.2	103.0	15.0	0.0
Zimbabwe	80.5	157.9	238.4	306.7	10.2	50.0	168.3	163.7	332.0	408.1	0.0	40.6
High income countries	**83 285.1**	**17 986.0**	**101 271.1**	**124 661.4**	**10 283.6**	**19 962.1**	**116 530.5**	**16 052.6**	**132 583.1**	**167 488.9**	**5 151.2**	**27 647.6**
Australia	4 348.9	623.7	4 972.6	10 850.7	451.7	6 130.3	5 423.9	472.4	5 896.3	19 200.0	0.0	12 730.6
Canada	5 411.9	928.7	6 340.6	8 120.0	566.9	791.4	7 047.8	914.0	7 961.8	9 060.4	0.0	417.9
Iceland	56.4	11.5	67.9	105.8	1.0	0.7	59.8	17.6	77.4	121.7	0.0	0.3

COUNTRY	MILK 2000						MILK 2030					
	Consumption			Production	Import	Export	Consumption			Production	Import	Export
	Urban	Rural	Total				Urban	Rural	Total			
Israel	1 157.9	111.3	1 269.2	1 229.6	132.3	8.6	1 914.4	148.7	2 063.1	2 096.0	124.9	0.0
Japan	5 543.0	2 875.4	8 418.4	8 419.2	2 167.6	13.1	8 004.8	2 886.8	10 891.6	10 811.9	2 710.1	0.0
New Zealand	657.0	101.2	758.2	12 092.8	56.1	9 669.9	696.0	83.9	779.9	16 200.0	0.0	13 905.8
Norway	949.2	239.9	1 189.1	1 741.2	31.2	199.0	1 033.4	219.4	1 252.8	2 046.7	0.0	171.9
Republic of Korea	1 023.6	252.7	1 276.3	2 282.7	308.9	9.2	2 379.1	373.2	2 752.3	4 669.5	672.2	0.0
Saudi Arabia	1 595.1	344.8	1 939.9	923.9	1 278.2	211.6	4 355.3	601.6	4 956.9	3 563.5	1 500.0	0.0
Switzerland	1 654.2	485.8	2 140.0	3 919.9	344.6	676.3	1 614.9	381.7	1 996.6	4 079.7	0.0	421.1
Trinidad and Tobago	23.8	102.7	126.5	10.4	137.2	10.9	48.2	109.3	157.5	14.3	144.0	0.0
United States of America	60 864.0	11 908.4	72 772.4	74 965.2	4 807.9	2 241.1	83 953.0	9 843.9	93 796.9	95 625.2	0.0	0.0

Table C 4. Change in consumption and production of milk between 2000 and 2030 (absolute change is in thousands of metric tonnes, proportional change in percentage).

COUNTRY	MILK, CHANGE BETWEEN 2000 AND 2030													
	Consumption								Production		Import		Export	
	Absolute change			Percent change			Proportion of change due to change in consump. rates %	Proportion of change due to change in population %	Absolute change	Percent change	Absolute change	Percent change	Absolute change	Percent change
	Urban	Rural	Total	Urban	Rural	Total								
East Asia and Pacific	**18 477.1**	**5 287.8**	**23 764.9**	**211.8**	**57.2**	**132.2**			**21 832.8**	**150.8**	**3 358.4**	**55.2**	**-778.4**	**-100.0**
Cambodia	35.9	37.3	73.2	413.4	104.2	164.5	29.0	48.1	19.6	96.1	55.3	218.6	0.0	
China	12 296.7	3 639.3	15 936.0	217.4	66.1	142.8	79.3	9.7	17 287.5	140.3	293.3	48.9	-202.9	-100.0
Dem. People's Rep. of Korea	57.9	7.0	64.9	107.6	22.6	76.4	75.0	15.9	65.8	73.7	0.2		0.0	
Indonesia	1 512.5	55.1	1 567.6	219.7	5.9	96.5	51.6	32.3	1 672.7	217.6	-177.8	-15.0	-243.3	-100.0
Lao People's Dem. Rep.	28.3	12.8	41.1	573.5	73.9	184.3	33.5	41.1	15.1	255.9	37.1	220.8	0.0	
Malaysia	1 070.1	-42.3	1 027.8	147.6	-9.9	89.3	26.5	59.4	53.7	144.7	944.8	70.8	-135.0	-100.0
Myanmar	443.7	192.0	635.7	224.3	38.6	91.5	53.0	31.6	568.7	91.8	81.6	67.9	0.0	
Philippines	1 545.8	125.8	1 671.6	174.6	20.0	110.4	36.2	45.6	10.4	101.0	1 564.1	97.4	-59.1	-100.0
Thailand	1 227.9	1 019.4	2 247.3	285.4	108.1	163.7	69.0	14.5	1 958.6	379.4	236.6	24.6	-138.1	-100.0
Viet Nam	258.4	241.3	499.7	350.9	104.0	163.5	55.0	23.7	180.7	222.0	323.2	142.5	0.0	
Eastern Europe and Central Asia	**5 070.1**	**-706.1**	**4 364.0**	**23.7**	**-8.2**	**14.6**			**5 246.4**	**12.4**	**-1 025.7**	**-70.7**	**-1 139.5**	**-100.0**
Russian Federation	-105.7	-865.1	-970.8	-0.7	-14.9	-4.4	-366.4	401.3	-868.3	-2.7	-1 121.7	-81.8	-1 120.5	-100.0
Turkey	5 175.8	159.0	5 334.8	98.9	5.8	66.7	35.7	51.9	6 114.7	62.5	96.0	122.4	-19.0	-100.0

COUNTRY	MILK, CHANGE BETWEEN 2000 AND 2030													
	Consumption								Production		Import		Export	
	Absolute change			Percent change			Proportion of change due to change in consump. rates %	Proportion of change due to change in population %	Absolute change	Percent change	Absolute change	Percent change	Absolute change	Percent change
	Urban	Rural	Total	Urban	Rural	Total								
Latin America/ Caribbean	**38 296.7**	**1 520.8**	**39 817.5**	**88.9**	**12.2**	**71.6**			**43 995.8**	**75.8**	**640.4**	**9.1**	**903.9**	**34.8**
Argentina	3 750.0	-128.4	3 621.6	49.4	-19.3	43.9	22.2	70.9	5 078.1	49.7	-90.6	-100.0	1 070.6	74.8
Bolivia	346.1	51.8	397.9	178.4	52.6	136.1	35.2	43.8	431.6	171.9	-30.6	-37.2	-20.8	-100.0
Brazil	14 016.1	-212.3	13 803.8	90.9	-5.2	70.8	45.4	41.4	15 638.6	76.2	-625.8	-43.8	-37.1	-100.0
Chile	1 510.3	23.4	1 533.7	103.2	9.2	89.4	46.9	37.4	1 853.2	88.8	-113.1	-67.2	-139.8	-100.0
Colombia	3 793.9	404.4	4 198.3	112.9	32.0	90.8	35.3	49.0	4 903.6	86.0	-118.9	-95.3	-112.9	-100.0
Costa Rica	539.9	57.5	597.4	135.5	21.6	89.8	30.0	55.1	562.0	74.1	-32.5	-100.0	-33.7	-79.5
Cuba	216.9	117.3	334.2	38.7	25.2	32.6	95.1	3.8	462.3	74.9	-118.0	-26.8	0.0	
Dominican Republic	349.3	-22.8	326.5	111.6	-12.1	65.1	34.1	54.0	197.3	48.6	136.1	117.6	0.0	
Ecuador	1 055.8	79.7	1 135.5	146.7	16.4	94.3	41.6	42.0	1 994.6	96.6	-10.7	-100.0	-1.2	-21.4
El Salvador	406.6	94.1	500.7	129.0	41.7	92.6	38.7	45.1	492.1	129.6	18.4	9.9	-5.5	-100.0
Guatemala	388.6	132.2	520.8	183.5	51.9	111.7	13.6	75.1	324.4	123.5	194.7	94.8	-2.3	-100.0
Guyana	18.1	14.2	32.3	81.2	30.8	47.2	128.7	-17.9	50.7	169.0	-18.4	-47.9	0.0	
Haiti	108.1	-9.1	99.0	217.0	-11.3	75.8	35.4	50.9	44.9	71.3	56.2	79.9	0.0	
Honduras	555.6	174.1	729.7	175.4	46.0	104.9	22.4	62.9	769.6	133.7	-45.8	-36.4	-5.9	-100.0
Jamaica	46.2	9.2	55.4	80.0	17.2	49.9	28.9	62.2	15.5	54.6	30.1	31.7	-9.9	-100.0
Mexico	7 534.6	402.2	7 936.8	91.1	14.6	71.9	38.0	48.7	7 187.2	76.8	806.2	29.1	-123.4	-100.0

COUNTRY	MILK, CHANGE BETWEEN 2000 AND 2030													
	Consumption								Production		Import		Export	
	Absolute change			Percent change			Proportion of change due to change in consump. rates %	Proportion of change due to change in population %	Absolute change	Percent change	Absolute change	Percent change	Absolute change	Percent change
	Urban	Rural	Total	Urban	Rural	Total								
Nicaragua	275.8	110.6	386.4	267.3	132.9	207.3	36.0	36.7	345.9	147.6	-54.2	-100.0	-107.3	-100.0
Panama	177.1	-2.8	174.3	133.5	-4.2	87.0	25.5	61.0	154.9	90.7	-9.1	-15.4	-17.5	-100.0
Paraguay	443.5	100.4	543.9	217.7	59.9	146.4	24.8	55.2	547.0	148.4	8.3	36.7	-1.4	-100.0
Peru	1 017.2	156.2	1 173.4	100.1	51.9	89.1	35.9	48.5	1 211.3	111.7	-3.0	-1.1	-8.1	-100.0
Suriname	8.4	-0.5	7.9	36.0	-14.7	29.0	41.8	51.8	5.9	44.7	8.0	84.2	0.0	
Uruguay	218.0	-4.9	213.1	36.1	-9.1	32.4	36.4	56.9	850.2	58.0	-5.5	-100.0	465.3	88.7
Venezuela	1 520.7	-25.8	1 494.9	86.6	-9.8	74.0	19.2	70.8	874.9	63.0	658.6	102.7	-5.2	-100.0
Middle East/North Africa	**13 979.6**	**3 933.7**	**17 913.3**	**145.8**	**59.6**	**110.6**			**16 751.0**	**102.9**	**4 000.7**	**105.7**	**-137.3**	**-100.0**
Algeria	2 670.9	97.2	2 768.1	116.4	10.0	84.7	31.5	54.1	2 192.9	148.3	637.8	34.2	0.0	
Egypt	1 980.4	1 530.7	3 511.1	137.1	77.7	102.8	25.3	59.3	3 832.4	99.7	323.5	85.8	-27.6	-100.0
Iran (Islamic Republic of)	3 195.2	232.5	3 427.7	128.4	17.2	89.2	37.1	47.2	4 634.3	79.8	221.7	359.9	-20.8	-100.0
Iraq	2 086.1	801.7	2 887.8	480.7	415.8	460.7	40.7	20.7	1 431.9	267.8	1 594.5	1 129.2	0.0	
Jordan	346.1	60.8	406.9	130.7	82.7	120.3	23.6	59.5	355.0	181.8	44.2	25.8	-18.6	-100.0
Lebanon	215.1	4.2	219.3	59.9	7.6	52.9	25.2	66.0	241.3	115.9	42.8	12.0	-2.1	-100.0
Libyan Arab Jamahiriya	303.9	33.1	337.0	107.0	38.5	91.1	25.5	60.5	269.8	130.0	53.3	27.5	0.0	
Morocco	710.3	176.3	886.6	133.4	38.0	89.0	33.1	51.7	1 008.2	82.9	78.2	56.9	-45.1	-100.0

COUNTRY	MILK, CHANGE BETWEEN 2000 AND 2030													
	Consumption								Production		Import		Export	
	Absolute change			Percent change			Proportion of change due to change in consump. rates %	Proportion of change due to change in population %	Absolute change	Percent change	Absolute change	Percent change	Absolute change	Percent change
	Urban	Rural	Total	Urban	Rural	Total								
Syrian Arab Republic	1 185.5	387.7	1 573.2	158.1	55.7	108.8	18.7	67.6	1 756.9	107.4	94.5	102.1	-9.6	-100.0
Tunisia	641.8	66.6	708.4	107.7	19.4	75.4	46.6	39.5	699.0	76.1	29.5	41.5	-10.6	-100.0
Yemen	644.4	542.8	1 187.2	449.8	139.4	222.9	6.8	81.0	329.3	144.4	880.7	275.8	-2.9	-100.0
South Asia	**64 082.6**	**54 859.8**	**118 942.4**	**235.8**	**81.8**	**126.3**			**141 352.1**	**122.7**	**1 227.3**	**124.1**	**-291.5**	**-100.0**
Afghanistan	1 205.6	1 288.5	2 494.1	310.5	115.4	165.7	8.5	80.2	2 739.0	164.8	20.2	561.1	0.0	
Bangladesh	1 500.2	1 374.8	2 875.0	326.9	93.9	149.4	37.6	40.0	3 245.4	153.4	328.0	98.2	-0.2	-100.0
India	40 762.4	38 567.7	79 330.1	219.6	80.5	119.4	48.1	32.9	96 781.2	118.6	165.0	242.6	-289.3	-100.0
Nepal	524.4	667.8	1 192.2	415.2	82.6	127.6	24.6	57.4	1 450.9	123.8	7.2	48.6	0.0	
Pakistan	19 964.4	12 712.1	32 676.5	265.7	84.0	144.3	19.6	62.7	36 932.5	130.2	525.6	577.6	-0.8	-100.0
Sri Lanka	125.6	248.9	374.5	99.3	39.8	49.8	57.3	33.2	203.1	68.7	181.3	37.9	-1.2	-100.0
Sub-Saharan Africa	**13 428.9**	**7 510.4**	**20 939.3**	**196.0**	**59.2**	**107.2**			**20 390.2**	**106.7**	**1 388.0**	**38.0**	**-181.0**	**-128.6**
Angola	337.1	59.0	396.1	301.2	63.8	193.9	14.2	67.3	383.0	197.7	27.2	122.0	0.0	
Benin	60.1	33.7	93.8	241.3	84.9	145.2	18.1	64.9	58.0	200.0	37.8	101.6	-0.2	-100.0
Botswana	40.1	-34.3	5.8	29.7	-39.3	2.6	507.5	-359.8	55.7	53.5	-34.8	-22.5	-0.5	-100.0
Burkina Faso	215.2	282.9	498.1	419.8	138.5	195.0	13.3	68.9	556.6	251.9	-40.2	-80.2	-0.7	-100.0
Burundi	24.1	79.6	103.7	836.2	265.9	316.2	28.9	37.1	81.7	278.8	25.0	500.0	0.0	
Cameroon	146.1	-4.1	142.0	120.5	-3.9	62.3	20.4	70.6	148.1	80.5	-6.4	-11.3	-3.3	-100.0

COUNTRY	MILK, CHANGE BETWEEN 2000 AND 2030													
	Consumption								Production		Import		Export	
	Absolute change			Percent change			Proportion of change due to change in consump. rates %	Proportion of change due to change in population %	Absolute change	Percent change	Absolute change	Percent change	Absolute change	Percent change
	Urban	Rural	Total	Urban	Rural	Total								
Central African Republic	44.6	31.0	75.6	175.9	86.2	123.3	41.7	38.5	75.8	120.7	1.4	82.4	0.0	
Chad	182.9	159.7	342.6	324.3	106.2	165.7	10.8	75.7	361.3	164.4	0.8	17.0	0.0	
Congo	63.1	21.4	84.5	302.8	137.7	232.1	22.2	51.4	2.0	200.0	82.4	232.1	-0.1	-100.0
Cote d'Ivoire	93.8	24.0	117.8	191.2	36.5	102.6	36.9	45.8	49.8	201.6	23.0	16.8	-53.2	-100.0
Dem. Rep. of the Congo	67.8	52.7	120.5	525.2	194.6	301.3	27.4	39.8	56.2	1 080.8	65.0	185.7	0.0	
Eritrea	53.6	63.8	117.4	377.0	100.3	150.9	11.5	75.4	108.6	159.9	11.8	88.7	0.0	
Ethiopia	682.0	1 165.0	1 847.0	329.9	110.7	146.7	18.5	64.0	1 872.8	143.5	52.0	666.7	0.0	
Gabon	40.9	0.4	41.3	118.5	9.0	105.4	25.0	59.4	4.6	287.5	36.9	97.6	0.0	
Gambia	30.2	2.0	32.2	159.1	13.8	96.7	10.7	80.9	18.7	246.1	13.8	52.7	-0.1	-100.0
Ghana	130.3	30.9	161.2	236.2	50.6	138.6	31.2	48.0	97.4	284.8	65.1	76.7	-1.0	-100.0
Guinea	83.5	41.9	125.4	212.4	63.0	118.4	15.9	70.8	109.9	139.1	19.0	61.3	-0.2	-100.0
Kenya	791.1	625.6	1 416.7	148.9	30.6	55.0	27.4	63.1	1 440.3	53.2	-1.7	-6.6	-2.8	-100.0
Lesotho	8.6	-2.7	5.9	147.8	-12.1	21.2	183.7	-60.3	5.6	23.8	0.0	0.0	0.0	
Liberia	13.3	3.1	16.4	322.3	92.0	218.7	16.9	60.6	1.3	185.7	15.2	223.5	0.0	
Madagascar	364.6	311.8	676.4	235.3	84.4	129.0	7.2	84.9	664.4	124.6	27.9	152.5	-0.2	-100.0
Malawi	17.3	14.0	31.3	270.5	39.3	74.3	-0.2	100.3	13.9	40.1	18.0	195.7	-0.1	-100.0

COUNTRY	MILK, CHANGE BETWEEN 2000 AND 2030													
	Consumption								Production		Import		Export	
	Absolute change			Percent change			Proportion of change due to change in consump. rates %	Proportion of change due to change in population %	Absolute change	Percent change	Absolute change	Percent change	Absolute change	Percent change
	Urban	Rural	Total	Urban	Rural	Total								
Mali	554.8	392.4	947.2	341.4	99.9	170.6	5.3	86.9	880.6	176.0	84.6	129.4	0.0	
Mauritania	257.9	133.9	391.8	160.6	71.4	112.5	2.3	95.3	374.1	116.7	25.6	56.8	-0.1	-100.0
Mauritius	44.3	11.4	55.7	56.2	22.9	43.2	41.4	49.7	0.1	2.1	54.4	43.0	-1.6	-100.0
Mozambique	77.2	25.1	102.3	250.3	37.7	105.1	35.8	46.6	107.5	156.5	-2.4	-7.4	0.0	
Niger	154.7	403.0	557.7	293.6	149.6	173.1	-1.9	105.3	519.9	169.0	53.4	141.3	-2.3	-100.0
Nigeria	928.8	211.4	1 140.2	219.1	38.8	117.8	17.7	68.0	513.6	125.7	743.9	112.5	-2.2	-100.0
Rwanda	77.7	124.6	202.3	412.1	141.2	188.9	34.2	40.0	207.5	206.3	0.0	0.0	0.0	
Senegal	177.3	88.4	265.7	152.8	55.3	96.3	9.3	83.2	193.3	135.8	72.2	48.8	-7.3	-100.0
Sierra Leone	22.6	14.7	37.3	210.3	83.7	131.8	19.0	64.8	26.6	125.5	11.9	146.9	0.0	
Somalia	1 762.8	1 192.7	2 955.5	317.9	115.9	186.6	1.3	96.3	3 230.8	147.2	23.7	359.1	0.0	
South Africa	731.7	-187.9	543.8	53.6	-18.0	22.6	123.2	-18.2	653.2	25.5	-149.1	-100.0	-75.5	-43.0
Sudan	4 241.8	876.6	5 118.4	232.7	30.1	108.1	27.3	56.1	5 315.6	108.6	23.8	52.9	0.0	
Swaziland	13.5	-3.7	9.8	72.6	-6.6	13.0	119.6	-16.9	23.2	63.9	-19.5	-35.7	-11.3	-100.0
Togo	18.6	5.5	24.1	214.5	46.3	117.6	18.8	66.5	9.5	105.6	8.7	60.8	-5.4	-100.0
Uganda	239.0	743.7	982.7	407.1	173.2	201.3	5.3	85.5	991.9	194.3	19.2	800.0	-0.5	-100.0
United Republic of Tanzania	521.3	493.9	1 015.2	290.8	78.8	126.0	30.4	50.3	1 036.0	128.8	5.6	23.0	-1.1	-100.0
Zambia	26.9	17.4	44.3	108.4	38.6	63.4	18.5	72.9	39.7	62.7	3.0	25.0	-1.9	-100.0

COUNTRY	MILK, CHANGE BETWEEN 2000 AND 2030													
	Consumption								Production		Import		Export	
	Absolute change			Percent change			Proportion of change due to change in consump. rates %	Proportion of change due to change in population %	Absolute change	Percent change	Absolute change	Percent change	Absolute change	Percent change
	Urban	Rural	Total	Urban	Rural	Total								
Zimbabwe	87.8	5.8	93.6	109.2	3.6	39.3	96.3	2.7	101.4	33.1	-10.2	-100.0	-9.4	-18.8
High income countries	**33 245.4**	**-1 933.4**	**31 312.0**	**39.9**	**-10.7**	**30.9**			**42 827.5**	**34.4**	**-5 132.4**	**-49.9**	**7 685.5**	**38.5**
Australia	1 075.0	-151.3	923.7	24.7	-24.3	18.6	-25.4	131.6	8 349.3	76.9	-451.7	-100.0	6 600.3	107.7
Canada	1 635.9	-14.7	1 621.2	30.2	-1.6	25.6	17.5	79.0	940.4	11.6	-566.9	-100.0	-373.5	-47.2
Iceland	3.4	6.1	9.5	6.1	52.8	14.0	-18.5	121.7	15.9	15.0	-1.0	-100.0	-0.4	-57.1
Israel	756.5	37.4	793.9	65.3	33.6	62.6	15.2	77.5	866.4	70.5	-7.4	-5.6	-8.6	-100.0
Japan	2 461.7	11.5	2 473.2	44.4	0.4	29.4	121.9	-16.1	2 392.7	28.4	542.5	25.0	-13.1	-100.0
New Zealand	39.0	-17.3	21.7	5.9	-17.1	2.9	-443.5	622.5	4 107.2	34.0	-56.1	-100.0	4 235.9	43.8
Norway	84.2	-20.5	63.7	8.9	-8.6	5.4	-76.5	184.1	305.5	17.5	-31.2	-100.0	-27.1	-13.6
Republic of Korea	1 355.5	120.5	1 476.0	132.4	47.7	115.6	88.0	5.9	2 386.8	104.6	363.3	117.6	-9.2	-100.0
Saudi Arabia	2 760.2	256.8	3 017.0	173.0	74.5	155.5	19.9	61.1	2 639.6	285.7	221.8	17.4	-211.6	-100.0
Switzerland	-39.4	-104.0	-143.4	-2.4	-21.4	-6.7	-8.2	107.6	159.8	4.1	-344.6	-100.0	-255.2	-37.7
Trinidad and Tobago	24.3	6.7	31.0	102.2	6.5	24.5	85.5	12.0	3.9	37.5	6.8	5.0	-10.9	-100.0
United States of America	23 088.9	-2 064.4	21 024.5	37.9	-17.3	28.9	-2.9	103.7	20 660.0	27.6	-4 807.9	-100.0	-2 241.1	-100.0

Table C 5. Consumption and production of mutton in 2000 and 2030 (all measures are in thousands of metric tonnes).

COUNTRY	MUTTON 2000						MUTTON 2030					
	Consumption			Production	Import	Export	Consumption			Production	Import	Export
	Urban	Rural	Total				Urban	Rural	Total			
East Asia and Pacific	**1 456.8**	**1 437.8**	**2 894.6**	**2 869.8**	**33.1**	**8.2**	**3 022.5**	**1 540.6**	**4 563.1**	**4 530.6**	**32.5**	0.0
China	1 384.2	1 356.8	2 741.0	2 732.1	16.9	8.0	2 825.2	1 453.1	4 278.3	4 268.3	10.0	0.0
Dem. People's Rep. of Korea	6.8	4.0	10.8	10.8	0.0	0.0	16.8	5.7	22.5	22.5	0.0	0.0
Indonesia	33.2	45.4	78.6	78.0	0.7	0.1	95.7	43.2	138.9	138.9	0.0	0.0
Lao People's Dem. Rep.	0.1	0.4	0.5	0.5	0.0	0.0	1.0	0.9	1.9	1.9	0.0	0.0
Malaysia	9.3	5.5	14.8	0.2	14.8	0.1	18.6	4.0	22.6	0.5	22.1	0.0
Myanmar	2.4	6.6	9.0	9.0	0.0	0.0	8.9	9.5	18.4	18.4	0.0	0.0
Philippines	19.5	14.5	34.0	33.5	0.5	0.0	52.1	16.2	68.3	68.3	0.0	0.0
Thailand	0.2	0.9	1.1	0.9	0.2	0.0	0.4	1.0	1.4	1.0	0.4	0.0
Viet Nam	1.1	3.7	4.8	4.8	0.0	0.0	4.0	6.8	10.8	10.8	0.0	0.0
Eastern Europe and Central Asia	**341.8**	**163.5**	**505.3**	**506.0**	**3.2**	**4.0**	**550.4**	**159.2**	**709.6**	**699.6**	**20.0**	**10.0**
Russian Federation	103.8	38.1	141.9	138.9	3.1	0.2	135.4	42.5	177.9	157.9	20.0	0.0
Turkey	237.9	125.5	363.4	367.1	0.1	3.8	415.0	116.7	531.7	541.7	0.0	10.0
Latin America/Caribbean	**344.1**	**98.1**	**442.2**	**406.7**	**65.2**	**21.6**	**577.6**	**103.5**	**681.1**	**630.0**	**89.8**	**33.3**
Argentina	53.2	4.7	57.9	57.0	1.8	1.0	85.9	4.1	90.0	90.0	0.0	0.0
Bolivia	13.7	7.7	21.4	21.4	0.0	0.0	31.2	9.6	40.8	40.8	0.0	0.0
Brazil	91.0	24.5	115.5	108.2	7.3	0.0	164.9	22.5	187.4	168.2	19.2	0.0
Chile	10.6	1.9	12.5	17.1	0.1	4.7	17.3	1.7	19.0	24.0	0.0	5.0
Colombia	9.2	3.5	12.7	13.0	0.0	0.3	15.3	3.7	19.0	19.0	0.0	0.0

COUNTRY	MUTTON 2000						MUTTON 2030					
	Consumption			Production	Import	Export	Consumption			Production	Import	Export
	Urban	Rural	Total				Urban	Rural	Total			
Costa Rica	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.1	0.0
Cuba	1.0	0.8	1.8	1.8	0.0	0.0	8.4	6.3	14.7	18.0	0.0	3.3
Dominican Republic	0.7	0.4	1.1	1.0	0.1	0.0	0.8	0.3	1.1	1.1	0.0	0.0
Ecuador	4.6	3.2	7.8	7.7	0.0	0.0	7.8	2.6	10.4	10.4	0.0	0.0
El Salvador	0.0	0.1	0.1	0.1	0.0	0.0	0.1	0.1	0.2	0.2	0.0	0.0
Guatemala	0.7	1.0	1.7	1.7	0.0	0.0	2.2	1.4	3.6	3.6	0.0	0.0
Guyana	0.3	0.5	0.8	0.8	0.0	0.0	0.3	0.4	0.7	0.7	0.0	0.0
Haiti	2.6	4.2	6.8	6.8	0.0	0.0	11.4	5.2	16.6	16.6	0.0	0.0
Honduras	0.1	0.2	0.3	0.3	0.0	0.0	0.3	0.2	0.5	0.5	0.0	0.0
Jamaica	3.4	3.1	6.5	1.7	4.8	0.0	6.1	3.7	9.8	2.2	7.6	0.0
Mexico	85.0	29.4	114.4	63.7	50.7	0.0	129.9	27.4	157.3	94.9	62.4	0.0
Nicaragua	0.0	0.1	0.1	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.0	0.0
Paraguay	1.8	1.5	3.3	3.3	0.0	0.0	3.6	1.5	5.1	5.1	0.0	0.0
Peru	22.6	6.9	29.5	37.7	0.2	0.0	39.2	9.1	48.3	53.2	0.5	0.0
Suriname	0.1	0.0	0.1	0.1	0.0	0.0	0.1	0.0	0.1	0.1	0.0	0.0
Uruguay	35.4	3.2	38.6	54.2	0.0	15.6	39.1	2.4	41.5	66.5	0.0	25.0
Venezuela	8.0	1.3	9.3	9.1	0.2	0.0	13.8	1.0	14.8	14.8	0.0	0.0
Middle East/North Africa	**748.4**	**503.7**	**1 252.1**	**1 238.2**	**47.4**	**33.5**	**1 795.3**	**743.6**	**2 538.9**	**2 339.5**	**226.8**	**15.0**
Algeria	126.2	53.6	179.8	176.4	3.4	0.0	277.7	60.1	337.8	337.8	0.0	0.0
Egypt	44.5	61.2	105.7	100.1	5.4	0.1	97.1	100.0	197.1	187.1	10.0	0.0
Iran (Islamic Republic of)	275.8	150.4	426.2	437.2	0.8	11.8	568.4	158.8	727.2	727.2	0.0	0.0

COUNTRY	MUTTON 2000						MUTTON 2030					
	Consumption			Production	Import	Export	Consumption			Production	Import	Export
	Urban	Rural	Total				Urban	Rural	Total			
Iraq	19.6	8.9	28.5	28.5	0.0	0.0	163.5	64.6	228.1	80.0	148.1	0.0
Jordan	17.5	4.9	22.4	8.8	19.9	6.3	42.5	9.4	51.9	8.0	43.9	0.0
Lebanon	8.2	1.3	9.5	5.4	7.7	0.0	12.8	1.3	14.1	6.0	8.8	0.0
Libyan Arab Jamahiriya	31.2	9.4	40.6	35.5	1.1	0.0	72.9	14.8	87.7	82.7	5.0	0.0
Morocco	78.5	68.6	147.1	146.8	0.2	-0.1	176.9	91.4	268.3	267.3	1.0	0.0
Syrian Arab Republic	93.9	87.5	181.4	188.0	5.3	11.9	231.5	129.9	361.4	388.0	0.0	15.0
Tunisia	40.2	23.2	63.4	64.1	0.0	0.0	78.8	26.2	105.0	105.1	0.0	0.0
Yemen	12.8	34.7	47.5	47.4	3.6	3.5	73.2	87.1	160.3	150.3	10.0	0.0
South Asia	**428.8**	**1 068.9**	**1 497.7**	**1 507.9**	**1.3**	**11.7**	**1 379.3**	**1 840.8**	**3 220.1**	**2 957.6**	**262.5**	**0.0**
Afghanistan	33.8	97.4	131.2	131.2	0.0	0.0	209.2	315.7	524.9	524.9	0.0	0.0
Bangladesh	31.2	100.4	131.6	131.5	0.2	0.1	130.3	189.8	320.1	320.1	0.0	0.0
India	190.4	496.9	687.3	696.3	0.2	9.3	513.3	761.6	1 274.9	1 024.9	250.0	0.0
Nepal	5.3	34.6	39.9	39.8	0.3	0.2	27.2	62.4	89.6	89.6	0.0	0.0
Pakistan	167.6	337.6	505.2	507.3	0.0	2.1	498.0	506.9	1 004.9	994.9	10.0	0.0
Sri Lanka	0.4	2.1	2.5	1.8	0.6	0.0	1.3	4.4	5.7	3.2	2.5	0.0
Sub-Saharan Africa	**514.8**	**856.9**	**1 371.7**	**1 374.8**	**81.1**	**84.3**	**1 737.6**	**1 516.9**	**3 254.5**	**3 278.8**	**91.2**	**115.5**
Angola	5.8	4.9	10.7	10.7	0.0	0.0	27.8	9.4	37.2	37.2	0.0	0.0
Benin	2.5	4.0	6.5	6.5	0.0	0.0	7.1	6.2	13.3	13.3	0.0	0.0
Botswana	5.0	3.2	8.2	7.6	0.6	0.0	7.2	2.2	9.4	8.9	0.5	0.0
Burkina Faso	7.3	29.2	36.5	38.6	0.0	2.2	39.4	72.2	111.6	116.6	0.0	5.0
Burundi	0.3	3.7	4.0	4.0	0.0	0.0	1.9	7.7	9.6	9.6	0.0	0.0

COUNTRY	MUTTON 2000						MUTTON 2030					
	Consumption			Production	Import	Export	Consumption			Production	Import	Export
	Urban	Rural	Total				Urban	Rural	Total			
Cameroon	16.5	14.5	31.0	31.0	0.0	0.0	43.9	17.0	60.9	60.9	0.0	0.0
Central African Republic	4.4	6.2	10.6	10.5	0.1	0.0	14.0	13.4	27.4	27.4	0.0	0.0
Chad	8.3	22.2	30.5	32.6	0.0	2.1	34.0	44.0	78.0	80.1	0.0	2.1
Congo	0.6	0.5	1.1	1.0	0.1	0.0	1.6	0.7	2.3	2.2	0.1	0.0
Cote d'Ivoire	4.3	5.7	10.0	8.1	1.9	0.0	11.3	7.3	18.6	16.6	2.0	0.0
Dem. Rep. of the Congo	7.0	14.9	21.9	21.8	0.1	0.0	36.2	36.8	73.0	73.0	0.0	0.0
Eritrea	2.1	9.4	11.5	11.6	0.1	0.1	11.0	20.8	31.8	32.0	0.0	0.2
Ethiopia	10.1	51.8	61.9	63.1	0.0	1.2	41.5	104.5	146.0	146.0	0.0	0.0
Gabon	1.1	0.1	1.2	1.0	0.2	0.0	2.0	0.2	2.2	2.0	0.2	0.0
Gambia	0.5	0.3	0.8	0.8	0.0	0.0	1.2	0.4	1.6	1.6	0.0	0.0
Ghana	8.9	10.1	19.0	17.8	1.1	0.0	32.7	16.3	49.0	47.9	1.1	0.0
Guinea	2.9	5.0	7.9	8.1	0.2	0.4	12.7	11.2	23.9	23.9	0.0	0.0
Kenya	11.5	44.3	55.8	55.6	0.2	0.0	29.9	60.6	90.5	90.5	0.0	0.0
Lesotho	1.1	4.1	5.2	4.3	0.9	0.0	1.6	2.2	3.8	2.8	1.0	0.0
Liberia	0.7	0.6	1.3	1.3	0.0	0.0	2.4	1.0	3.4	3.4	0.0	0.0
Madagascar	2.9	6.9	9.8	9.8	0.0	0.0	8.7	11.4	20.1	20.1	0.0	0.0
Malawi	0.9	5.2	6.1	6.1	0.0	0.0	6.3	13.5	19.8	19.8	0.0	0.0
Mali	17.7	42.9	60.6	66.5	0.0	5.8	91.5	100.4	191.9	200.0	0.0	8.1
Mauritania	13.6	15.9	29.5	34.3	0.0	4.8	44.9	34.6	79.5	84.5	0.0	5.0
Mauritius	3.4	2.1	5.5	0.2	5.3	0.0	6.7	3.4	10.1	0.3	9.8	0.0
Mozambique	0.9	1.8	2.7	2.7	0.0	0.0	4.3	3.7	8.0	8.0	0.0	0.0

COUNTRY	MUTTON 2000						MUTTON 2030					
	Consumption			Production	Import	Export	Consumption			Production	Import	Export
	Urban	Rural	Total				Urban	Rural	Total			
Niger	6.4	32.7	39.1	42.8	0.0	3.7	22.9	74.2	97.1	100.1	0.0	3.0
Nigeria	100.5	130.0	230.5	221.3	9.2	0.0	352.8	198.9	551.7	541.7	10.0	0.0
Rwanda	0.6	2.8	3.4	3.4	0.0	0.0	1.7	3.9	5.6	5.6	0.0	0.0
Senegal	13.4	18.5	31.9	27.0	5.0	0.0	41.3	34.9	76.2	71.2	5.0	0.0
Sierra Leone	0.6	1.1	1.7	1.2	0.4	0.0	1.7	1.6	3.3	2.9	0.4	0.0
Somalia	25.7	47.7	73.4	107.7	0.0	34.2	126.3	121.3	247.6	287.6	0.0	40.0
South Africa	107.1	82.0	189.1	134.2	55.1	0.2	129.4	53.1	182.5	121.8	60.7	0.0
Sudan	98.1	156.7	254.8	284.2	0.0	29.5	466.5	291.4	757.9	810.0	0.0	52.1
Swaziland	0.8	2.5	3.3	2.8	0.5	0.0	1.3	2.1	3.4	3.0	0.4	0.0
Togo	2.9	4.0	6.9	6.9	0.0	0.0	10.4	6.6	17.0	17.0	0.0	0.0
Uganda	3.6	26.4	30.0	30.0	0.0	0.0	15.7	62.6	78.3	78.3	0.0	0.0
United Republic of Tanzania	8.8	30.6	39.4	39.3	0.1	0.1	29.3	47.3	76.6	76.6	0.0	0.0
Zambia	1.7	3.2	4.9	4.9	0.0	0.0	6.8	8.4	15.2	15.2	0.0	0.0
Zimbabwe	4.5	9.0	13.5	13.5	0.0	0.0	9.7	9.5	19.2	19.2	0.0	0.0
High income countries	**708.5**	**134.6**	**843.1**	**1 572.5**	**215.2**	**797.0**	**993.6**	**124.9**	**1 118.5**	**2 294.5**	**402.7**	**1 551.0**
Australia	293.1	42.2	335.3	802.9	0.4	415.9	331.0	28.9	359.9	1 216.8	0.0	850.0
Canada	22.3	4.0	26.3	12.8	16.1	1.8	29.1	4.0	33.1	13.5	19.6	0.0
Iceland	6.5	1.3	7.8	9.0	0.0	1.2	6.0	1.7	7.7	8.7	0.0	1.0
Israel	6.5	0.6	7.1	5.2	1.9	0.0	10.8	0.7	11.5	8.0	3.5	0.0
Japan	17.6	10.1	27.7	0.3	28.0	0.0	16.9	7.3	24.2	0.3	24.4	0.0

COUNTRY	MUTTON 2000						MUTTON 2030					
	Consumption			Production	Import	Export	Consumption			Production	Import	Export
	Urban	Rural	Total				Urban	Rural	Total			
New Zealand	82.4	12.7	95.1	539.7	4.0	359.2	83.5	10.1	93.6	813.9	0.0	700.0
Norway	19.5	4.9	24.4	23.5	0.9	0.1	21.1	4.5	25.6	25.6	0.0	0.0
Republic of Korea	4.5	1.3	5.8	2.8	4.0	1.0	8.7	1.4	10.1	7.1	3.0	0.0
Saudi Arabia	114.4	24.8	139.2	51.3	89.9	2.0	310.4	43.0	353.4	78.4	275.0	0.0
Switzerland	10.3	3.1	13.4	6.3	7.1	0.0	9.5	2.3	11.8	7.0	4.8	0.0
Trinidad and Tobago	0.4	1.7	2.1	0.5	1.7	0.0	0.7	1.7	2.4	0.0	2.4	0.0
United States of America	131.1	27.8	158.9	118.2	61.2	15.8	165.8	19.4	185.2	115.2	70.0	0.0

Table C 6. Change in consumption and production of mutton between 2000 and 2030 (absolute change is in thousands of metric tonnes, proportional change in percentage).

COUNTRY	MUTTON, CHANGE BETWEEN 2000 AND 2030													
	Consumption								Production		Import		Export	
	Absolute change			Percent change			Proportion of change due to change in consump. rates %	Proportion of change due to change in population %	Absolute change	Percent change	Absolute change	Percent change	Absolute change	Percent change
	Urban	Rural	Total	Urban	Rural	Total								
East Asia and Pacific	**1 565.7**	**102.8**	**1 668.5**	**107.5**	**7.1**	**57.6**			**1 660.8**	**57.9**	**-0.6**	**-1.8**	**-8.2**	**-100.0**
China	1 441.0	96.3	1 537.3	104.1	7.1	56.1	66.2	24.7	1 536.2	56.2	-6.9	-40.8	-8.0	-100.0
Dem. People's Rep. of Korea	9.9	1.8	11.7	145.8	44.2	108.3	79.1	11.2	11.7	108.3	0.0		0.0	
Indonesia	62.5	-2.2	60.3	188.5	-4.9	76.7	45.2	40.7	60.9	78.1	-0.7	-100.0	-0.1	-100.0
Lao People's Dem. Rep.	0.9	0.5	1.4	831.5	136.2	280.0	41.5	27.1	1.4	280.0	0.0		0.0	
Malaysia	9.3	-1.5	7.8	100.2	-26.9	52.7	-0.4	100.6	0.3	150.0	7.3	49.3	-0.1	-100.0
Myanmar	6.4	3.0	9.4	263.9	45.2	104.4	56.0	27.7	9.4	104.4	0.0		0.0	
Philippines	32.6	1.7	34.3	167.5	11.5	100.9	33.4	49.9	34.8	103.9	-0.5	-100.0	0.0	
Thailand	0.2	0.1	0.3	82.5	15.6	27.3	10.3	87.2	0.1	11.1	0.2	100.0	0.0	
Viet Nam	2.9	3.1	6.0	256.0	84.7	125.0	49.8	30.9	6.0	125.0	0.0		0.0	
Eastern Europe and Central Asia	**208.7**	**-4.4**	**204.3**	**61.1**	**-2.7**	**40.4**			**193.6**	**38.3**	**16.8**	**525.0**	**6.0**	**150.0**
Russian Federation	31.6	4.4	36.0	30.4	11.6	25.4	206.8	-70.0	19.0	13.7	16.9	545.2	-0.2	-100.0
Turkey	177.1	-8.8	168.3	74.4	-7.0	46.3	18.7	74.8	174.6	47.6	-0.1	-100.0	6.2	163.2
Latin America/ Caribbean	**233.5**	**5.4**	**238.9**	**67.9**	**5.5**	**54.0**			**223.3**	**54.9**	**24.6**	**37.7**	**11.7**	**54.2**

COUNTRY	MUTTON, CHANGE BETWEEN 2000 AND 2030													
	Consumption								Production		Import		Export	
	Absolute change			Percent change			Proportion of change due to change in consump. rates %	Proportion of change due to change in population %	Absolute change	Percent change	Absolute change	Percent change	Absolute change	Percent change
	Urban	Rural	Total	Urban	Rural	Total								
Argentina	32.7	-0.6	32.1	61.4	-12.7	55.4	33.5	56.1	33.0	57.9	-1.8	-100.0	-1.0	-100.0
Bolivia	17.5	1.9	19.4	127.5	24.8	90.7	21.4	65.8	19.4	90.7	0.0		0.0	
Brazil	73.9	-2.0	71.9	81.2	-8.0	62.3	41.0	47.0	60.0	55.5	11.9	163.0	0.0	
Chile	6.6	-0.1	6.5	62.4	-7.6	52.0	26.8	64.3	6.9	40.4	-0.1	-100.0	0.3	6.4
Colombia	6.1	0.2	6.3	66.6	5.2	49.6	7.2	89.6	6.0	46.2	0.0		-0.3	-100.0
Costa Rica	0.0	0.1	0.1	0.0	100.0	100.0	66.9	0.0	0.0		0.1		0.0	
Cuba	7.4	5.5	12.9	754.1	672.2	716.7	98.6	0.2	16.2	900.0	0.0		3.3	
Dominican Republic	0.1	-0.1	0.0	19.9	-32.0	0.0			0.1	10.0	-0.1	-100.0	0.0	
Ecuador	3.2	-0.6	2.6	68.7	-17.5	33.3	-13.4	118.7	2.7	35.1	0.0		0.0	
El Salvador	0.1	0.0	0.1	237.1	21.8	100.0	41.1	41.8	0.1	100.0	0.0		0.0	
Guatemala	1.4	0.5	1.9	199.0	46.7	111.8	13.6	75.0	1.9	111.8	0.0		0.0	
Guyana	0.0	-0.1	-0.1	7.7	-22.1	-12.5	35.5	67.5	-0.1	-12.5	0.0		0.0	
Haiti	8.8	1.0	9.8	343.1	23.5	144.1	52.9	26.8	9.8	144.1	0.0		0.0	
Honduras	0.1	0.1	0.2	123.1	30.3	66.7	0.6	99.0	0.2	66.7	0.0		0.0	
Jamaica	2.7	0.6	3.3	81.1	18.1	50.8	29.7	61.1	0.5	29.4	2.8	58.3	0.0	
Mexico	44.9	-2.0	42.9	52.9	-6.9	37.5	4.9	93.4	31.2	49.0	11.7	23.1	0.0	
Nicaragua	0.0	0.0	0.0	110.4	-43.1	0.0			0.1		0.0		0.0	
Paraguay	1.8	0.0	1.8	98.3	2.1	54.5	-26.6	148.1	1.8	54.5	0.0		0.0	

COUNTRY	MUTTON, CHANGE BETWEEN 2000 AND 2030													
	Consumption								Production		Import		Export	
	Absolute change			Percent change			Proportion of change due to change in consump. rates %	Proportion of change due to change in population %	Absolute change	Percent change	Absolute change	Percent change	Absolute change	Percent change
	Urban	Rural	Total	Urban	Rural	Total								
Peru	16.5	2.3	18.8	73.0	33.1	63.7	22.4	67.8	15.5	41.1	0.3	150.0	0.0	
Suriname	0.0	0.0	0.0	5.5	-29.3	0.0			0.0	0.0	0.0		0.0	
Uruguay	3.7	-0.8	2.9	10.5	-25.3	7.5	-122.7	245.3	12.3	22.7	0.0		9.4	60.3
Venezuela	5.8	-0.3	5.5	72.0	-21.5	59.1	7.5	88.6	5.7	62.6	-0.2	-100.0	0.0	
Middle East/ North Africa	**1 047.0**	**239.8**	**1 286.8**	**139.9**	**47.6**	**102.8**			**1 101.3**	**88.9**	**179.4**	**378.5**	**-18.5**	**-55.2**
Algeria	151.5	6.5	158.0	120.0	12.1	87.9	32.8	52.2	161.4	91.5	-3.4	-100.0	0.0	
Egypt	52.7	38.7	91.4	118.5	63.2	86.5	18.4	70.5	87.0	86.9	4.6	85.2	-0.1	-100.0
Iran (Islamic Republic of)	292.6	8.4	301.0	106.1	5.6	70.6	28.4	59.6	290.0	66.3	-0.8	-100.0	-11.8	-100.0
Iraq	143.9	55.7	199.6	733.4	627.3	700.4	44.3	13.6	51.5	180.7	148.1		0.0	
Jordan	25.0	4.5	29.5	142.9	91.6	131.7	26.6	54.4	-0.8	-9.1	24.0	120.6	-6.3	-100.0
Lebanon	4.5	0.1	4.6	55.1	5.6	48.4	20.6	72.1	0.6	11.1	1.1	14.3	0.0	
Libyan Arab Jamahiriya	41.7	5.4	47.1	133.9	56.9	116.0	33.9	47.5	47.2	133.0	3.9	354.5	0.0	
Morocco	98.4	22.8	121.2	125.4	33.2	82.4	30.2	55.8	120.5	82.1	0.8	400.0	0.1	-100.0
Syrian Arab Republic	137.5	42.5	180.0	146.4	48.6	99.2	14.9	74.2	200.0	106.4	-5.3	-100.0	3.1	26.1
Tunisia	38.6	3.0	41.6	96.1	12.7	65.6	42.1	45.4	41.0	64.0	0.0		0.0	
Yemen	60.5	52.3	112.8	474.1	150.6	237.5	8.5	76.0	102.9	217.1	6.4	177.8	-3.5	-100.0
South Asia	**950.5**	**771.9**	**1 722.4**	**221.7**	**72.2**	**115.0**			**1 449.7**	**96.1**	**261.2**	**20 092.3**	**-11.7**	**-100.0**

COUNTRY	MUTTON, CHANGE BETWEEN 2000 AND 2030													
	Consumption								Production		Import		Export	
	Absolute change			Percent change			Proportion of change due to change in consump. rates %	Proportion of change due to change in population %	Absolute change	Percent change	Absolute change	Percent change	Absolute change	Percent change
	Urban	Rural	Total	Urban	Rural	Total								
Afghanistan	175.4	218.3	393.7	518.4	224.2	300.1	23.9	44.3	393.7	300.1	0.0		0.0	
Bangladesh	99.1	89.4	188.5	317.3	89.1	143.2	36.5	41.7	188.6	143.4	-0.2	-100.0	-0.1	-100.0
India	322.9	264.7	587.6	169.6	53.3	85.5	38.8	46.0	328.6	47.2	249.8	124 900.0	-9.3	-100.0
Nepal	21.9	27.8	49.7	409.1	80.6	124.6	23.8	58.8	49.8	125.1	-0.3	-100.0	-0.2	-100.0
Pakistan	330.4	169.3	499.7	197.2	50.1	98.9	4.5	91.4	487.6	96.1	10.0		-2.1	-100.0
Sri Lanka	0.9	2.3	3.2	210.1	112.1	128.0	74.7	12.9	1.4	77.8	1.9	316.7	0.0	
Sub-Saharan Africa	**1 222.9**	**659.9**	**1 882.8**	**237.6**	**77.0**	**137.3**			**1 904.0**	**138.5**	**10.1**	**12.5**	**31.2**	**37.0**
Angola	22.0	4.5	26.5	375.9	93.6	247.7	20.5	52.7	26.5	247.7	0.0		0.0	
Benin	4.6	2.2	6.8	183.4	55.5	104.6	5.1	90.1	6.8	104.6	0.0		0.0	
Botswana	2.2	-1.0	1.2	44.8	-32.0	14.6	181.2	-64.2	1.3	17.1	-0.1	-16.7	0.0	
Burkina Faso	32.1	43.0	75.1	438.6	147.4	205.8	14.8	65.3	78.0	202.1	0.0		2.8	127.3
Burundi	1.5	4.1	5.6	443.0	111.1	140.0	7.5	83.8	5.6	140.0	0.0		0.0	
Cameroon	27.4	2.5	29.9	166.2	17.3	96.5	37.8	45.6	29.9	96.5	0.0		0.0	
Central African Republic	9.6	7.2	16.8	219.7	115.4	158.5	47.5	30.0	16.9	161.0	-0.1	-100.0	0.0	
Chad	25.7	21.8	47.5	309.4	98.3	155.7	8.6	80.5	47.5	145.7	0.0		0.0	0.0
Congo	1.0	0.2	1.2	160.9	42.4	109.1	-4.3	109.4	1.2	120.0	0.0	0.0	0.0	
Cote d'Ivoire	7.0	1.6	8.6	164.8	27.5	86.0	30.9	54.6	8.5	104.9	0.1	5.3	0.0	
Dem. Rep. of the Congo	29.2	21.9	51.1	418.3	146.7	233.3	22.1	51.4	51.2	234.9	-0.1	-100.0	0.0	

COUNTRY	MUTTON, CHANGE BETWEEN 2000 AND 2030													
	Consumption								Production		Import		Export	
	Absolute change			Percent change			Proportion of change due to change in consump. rates %	Proportion of change due to change in population %	Absolute change	Percent change	Absolute change	Percent change	Absolute change	Percent change
	Urban	Rural	Total	Urban	Rural	Total								
Eritrea	8.9	11.4	20.3	426.2	120.8	176.5	16.6	64.5	20.4	175.9	-0.1	-100.0	0.1	100.0
Ethiopia	31.4	52.7	84.1	309.9	101.8	135.9	15.9	69.1	82.9	131.4	0.0		-1.2	-100.0
Gabon	1.0	0.0	1.0	94.9	2.1	83.3	15.3	75.1	1.0	100.0	0.0	0.0	0.0	
Gambia	0.8	0.0	0.8	166.5	12.9	100.0	12.2	78.2	0.8	100.0	0.0		0.0	
Ghana	23.8	6.2	30.0	266.8	61.5	157.9	34.7	42.2	30.1	169.1	0.0	0.0	0.0	
Guinea	9.8	6.2	16.0	333.8	125.5	202.5	31.9	41.4	15.8	195.1	-0.2	-100.0	-0.4	-100.0
Kenya	18.5	16.2	34.7	160.6	36.7	62.2	32.8	55.9	34.9	62.8	-0.2	-100.0	0.0	
Lesotho	0.5	-1.9	-1.4	52.1	-47.1	-26.9	60.2	47.5	-1.5	-34.9	0.1	11.1	0.0	
Liberia	1.7	0.4	2.1	243.3	63.0	161.5	7.7	82.1	2.1	161.5	0.0		0.0	
Madagascar	5.8	4.5	10.3	201.7	64.9	105.1	-2.0	104.2	10.3	105.1	0.0		0.0	
Malawi	5.4	8.3	13.7	593.1	159.8	224.6	38.3	33.2	13.7	224.6	0.0		0.0	
Mali	73.8	57.5	131.3	416.8	134.1	216.7	12.7	68.5	133.5	200.8	0.0		2.3	39.7
Mauritania	31.4	18.6	50.0	230.7	117.2	169.5	17.7	63.2	50.2	146.4	0.0		0.2	4.2
Mauritius	3.4	1.2	4.6	100.3	57.5	83.6	61.1	25.7	0.1	50.0	4.5	84.9	0.0	
Mozambique	3.5	1.8	5.3	408.2	98.8	196.3	50.3	25.0	5.3	196.3	0.0		0.0	
Niger	16.5	41.5	58.0	258.5	126.8	148.3	-8.1	122.9	57.3	133.9	0.0		-0.7	-18.9
Nigeria	252.3	68.9	321.2	251.1	53.0	139.3	23.6	57.5	320.4	144.8	0.8	8.7	0.0	
Rwanda	1.1	1.1	2.2	190.6	38.0	64.7	-9.5	116.7	2.2	64.7	0.0		0.0	

COUNTRY	MUTTON, CHANGE BETWEEN 2000 AND 2030													
	Consumption								Production		Import		Export	
	Absolute change			Percent change			Proportion of change due to change in consump. rates %	Proportion of change due to change in population %	Absolute change	Percent change	Absolute change	Percent change	Absolute change	Percent change
	Urban	Rural	Total	Urban	Rural	Total								
Senegal	27.9	16.4	44.3	208.0	88.8	138.9	23.5	57.7	44.2	163.7	0.0	0.0	0.0	
Sierra Leone	1.0	0.6	1.6	161.2	53.6	94.1	5.0	90.7	1.7	141.7	0.0	0.0	0.0	
Somalia	100.6	73.6	174.2	391.9	154.2	237.3	8.7	75.7	179.9	167.0	0.0		5.8	17.0
South Africa	22.2	-28.8	-6.6	20.7	-35.2	-3.5	-18.4	117.7	-12.4	-9.2	5.6	10.2	-0.2	-100.0
Sudan	368.4	134.7	503.1	375.7	85.9	197.4	43.1	30.7	525.8	185.0	0.0		22.6	76.6
Swaziland	0.5	-0.4	0.1	57.2	-14.8	3.0	176.7	-72.8	0.2	7.1	-0.1	-20.0	0.0	
Togo	7.5	2.6	10.1	256.3	66.1	146.4	26.2	53.4	10.1	146.4	0.0		0.0	
Uganda	12.2	36.1	48.3	342.3	136.6	161.0	-2.5	106.9	48.3	161.0	0.0		0.0	
United Republic of Tanzania	20.6	16.6	37.2	235.0	54.2	94.4	20.1	67.1	37.3	94.9	-0.1	-100.0	-0.1	-100.0
Zambia	5.1	5.2	10.3	292.8	164.9	210.2	53.3	22.0	10.3	210.2	0.0		0.0	
Zimbabwe	5.2	0.5	5.7	114.8	5.7	42.2	96.5	2.5	5.7	42.2	0.0		0.0	
High income countries	**285.1**	**-9.7**	**275.4**	**40.2**	**-7.2**	**32.7**			**722.0**	**45.9**	**187.5**	**87.1**	**754.0**	**94.6**
Australia	37.9	-13.3	24.6	12.9	-31.6	7.3	-187.4	333.2	413.9	51.6	-0.4	-100.0	434.1	104.4
Canada	6.8	0.0	6.8	30.5	-0.3	25.9	18.2	78.1	0.7	5.5	3.5	21.7	-1.8	-100.0
Iceland	-0.5	0.4	-0.1	-8.1	32.2	-1.3	1 220.0	-1 327.7	-0.3	-3.3	0.0		-0.2	-16.7
Israel	4.3	0.1	4.4	65.6	21.8	62.0	14.7	78.2	2.8	53.8	1.6	84.2	0.0	
Japan	-0.7	-2.8	-3.5	-3.8	-28.0	-12.6	65.7	37.4	0.0	0.0	-3.6	-12.9	0.0	

COUNTRY	MUTTON, CHANGE BETWEEN 2000 AND 2030													
	Consumption								Production		Import		Export	
	Absolute change			Percent change			Proportion of change due to change in consump. rates %	Proportion of change due to change in population %	Absolute change	Percent change	Absolute change	Percent change	Absolute change	Percent change
	Urban	Rural	Total	Urban	Rural	Total								
New Zealand	1.2	-2.7	-1.5	1.4	-20.8	-1.6	1 043.6	-1 129.6	274.2	50.8	-4.0	-100.0	340.8	94.9
Norway	1.7	-0.5	1.2	8.5	-9.3	4.9	-91.5	200.5	2.1	8.9	-0.9	-100.0	-0.1	-100.0
Republic of Korea	4.2	0.1	4.3	92.1	11.0	74.1	84.9	9.3	4.3	153.6	-1.0	-25.0	-1.0	-100.0
Saudi Arabia	196.1	18.1	214.2	171.4	73.0	153.9	19.6	61.7	27.1	52.8	185.1	205.9	-2.0	-100.0
Switzerland	-0.8	-0.8	-1.6	-7.6	-26.4	-11.9	42.7	60.4	0.7	11.1	-2.3	-32.4	0.0	
Trinidad and Tobago	0.3	0.0	0.3	85.7	-2.2	14.3	77.1	20.6	-0.5	-100.0	0.7	41.2	0.0	
United States of America	34.7	-8.4	26.3	26.4	-30.1	16.6	-62.4	181.0	-3.0	-2.5	8.8	14.4	-15.8	-100.0

Table C 7. Consumption and production of pork in 2000 and 2030 (all measures are in thousands of metric tonnes).

COUNTRY	PORK 2000						PORK 2030					
	Consumption			Production	Import	Export	Consumption			Production	Import	Export
	Urban	Rural	Total				Urban	Rural	Total			
East Asia and Pacific	**22 154.7**	**22 410.9**	**44 565.6**	**44 814.8**	**188.2**	**439.8**	**47 268.1**	**25 372.2**	**72 640.3**	**72 757.8**	**22.0**	**130.0**
Cambodia	20.4	84.7	105.1	105.1	0.0	0.0	133.4	219.9	353.3	353.3	0.0	0.0
China	20 623.4	20 075.2	40 698.6	40 896.1	148.5	340.3	41 575.2	21 173.4	62 748.6	62 758.0	0.0	0.0
Dem. People's Rep. of Korea	90.0	50.9	140.9	139.6	1.3	0.0	186.7	63.0	249.7	247.7	2.0	0.0
Indonesia	201.6	275.0	476.6	493.2	1.9	19.1	1 153.9	520.7	1 674.6	1 694.6	0.0	20.0
Lao People's Dem. Rep.	7.3	26.0	33.3	33.3	0.0	0.0	48.2	44.6	92.8	92.8	0.0	0.0
Malaysia	106.3	62.7	169.0	166.1	8.1	5.0	292.0	62.4	354.4	354.5	0.0	0.0
Myanmar	32.2	81.4	113.6	113.5	0.2	0.0	147.5	159.0	306.5	306.5	0.0	0.0
Philippines	609.5	433.2	1 042.7	1 014.8	28.4	0.5	1 866.9	579.7	2 446.6	2 426.6	20.0	0.0
Thailand	147.0	322.4	469.4	471.6	0.1	10.0	448.8	531.7	980.5	990.5	0.0	10.0
Viet Nam	317.0	999.4	1 316.4	1 381.5	-0.3	64.9	1 415.4	2 017.9	3 433.3	3 533.3	0.0	100.0
Eastern Europe and Central Asia	**1 501.8**	**541.0**	**2 042.8**	**1 517.6**	**403.7**	**10.4**	**1 646.0**	**508.9**	**2 154.9**	**1 958.8**	**200.0**	**0.2**
Russian Federation	1 501.8	540.9	2 042.7	1 517.4	403.6	10.2	1 645.9	508.9	2 154.8	1 958.5	200.0	0.0
Turkey	0.0	0.1	0.1	0.2	0.1	0.2	0.1	0.0	0.1	0.3	0.0	0.2
Latin America/Caribbean	**3 337.3**	**1 078.5**	**4 415.8**	**4 327.8**	**418.6**	**310.7**	**7 465.1**	**1 356.1**	**8 821.2**	**8 634.9**	**1 103.4**	**890.0**
Argentina	261.9	23.0	284.9	208.4	77.3	0.8	368.4	17.2	385.6	305.6	80.0	0.0
Bolivia	49.0	26.9	75.9	75.6	0.3	0.0	123.0	36.3	159.3	159.3	0.0	0.0
Brazil	1 287.4	342.1	1 629.5	1 845.9	1.1	218.0	3 434.3	452.1	3 886.4	4 736.4	0.0	850.0
Chile	211.7	36.6	248.3	269.6	3.1	24.4	371.5	34.7	406.2	446.2	0.0	40.0

COUNTRY	PORK 2000						PORK 2030					
	Consumption			Production	Import	Export	Consumption			Production	Import	Export
	Urban	Rural	Total				Urban	Rural	Total			
Colombia	68.1	25.6	93.7	86.3	7.4	0.0	197.5	45.9	243.4	220.0	23.4	0.0
Costa Rica	18.5	12.4	30.9	31.8	1.5	2.1	52.4	18.1	70.5	70.5	0.0	0.0
Cuba	79.9	66.5	146.4	133.0	11.8	-1.5	116.5	87.6	204.1	180.0	24.1	0.0
Dominican Republic	39.3	23.7	63.0	60.6	2.4	0.0	126.5	31.6	158.1	158.1	0.0	0.0
Ecuador	69.2	46.8	116.0	115.4	0.7	0.1	171.0	54.4	225.4	225.4	0.0	0.0
El Salvador	7.2	5.1	12.3	8.1	4.8	0.7	18.2	8.2	26.4	19.4	7.0	0.0
Guatemala	14.9	18.0	32.9	24.5	10.3	1.9	57.3	37.2	94.5	84.5	10.0	0.0
Guyana	0.3	0.5	0.8	0.5	0.3	0.0	0.8	1.3	2.1	0.5	1.6	0.0
Haiti	12.9	20.9	33.8	28.7	5.1	0.0	61.0	27.8	88.8	83.7	5.1	0.0
Honduras	7.7	9.2	16.9	9.5	7.5	0.1	19.6	12.5	32.1	24.1	8.0	0.0
Jamaica	4.2	3.9	8.1	6.6	1.6	0.1	7.4	4.4	11.8	11.8	0.0	0.0
Mexico	909.2	304.2	1 213.4	1 017.4	258.7	62.6	1 718.4	345.3	2 063.7	1 163.7	900.0	0.0
Nicaragua	3.5	2.9	6.4	5.9	1.4	0.9	17.7	9.1	26.8	26.8	0.0	0.0
Panama	20.8	10.7	31.5	22.2	10.2	0.2	62.6	13.2	75.8	67.3	10.0	0.0
Paraguay	76.9	63.7	140.6	139.9	0.8	0.1	159.5	66.4	225.9	225.9	0.0	0.0
Peru	59.1	17.5	76.6	94.2	0.5	0.1	170.0	38.2	208.2	210.0	21.3	0.0
Suriname	1.4	0.2	1.6	1.1	0.4	0.0	2.5	0.2	2.7	2.0	0.7	0.0
Uruguay	33.9	3.0	36.9	26.5	10.4	0.0	44.0	2.5	46.5	36.5	10.0	0.0
Venezuela	100.3	15.1	115.4	116.1	1.0	0.1	164.9	12.0	176.9	177.2	2.2	0.0
Middle East/North Africa	**12.4**	**4.1**	**16.5**	**6.3**	**10.8**	**0.3**	**20.0**	**5.0**	**25.0**	**9.7**	**16.4**	**0.0**
Algeria	0.2	0.0	0.2	0.1	0.0	0.0	0.2	0.0	0.2	0.2	0.0	0.0

COUNTRY	PORK 2000						PORK 2030					
	Consumption			Production	Import	Export	Consumption			Production	Import	Export
	Urban	Rural	Total				Urban	Rural	Total			
Egypt	1.1	2.0	3.1	3.1	0.0	0.0	2.2	2.7	4.9	4.9	0.0	0.0
Jordan	0.0	0.1	0.1	0.0	0.1	0.2	0.1	0.0	0.1	0.0	0.1	0.0
Lebanon	10.7	1.7	12.4	2.4	10.6	0.1	17.0	1.8	18.8	3.6	16.3	0.0
Morocco	0.3	0.4	0.7	0.6	0.1	0.0	0.6	0.4	1.0	1.0	0.0	0.0
Tunisia	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
South Asia	**161.3**	**432.4**	**593.7**	**593.8**	**0.6**	**1.0**	**618.7**	**925.1**	**1 543.8**	**1 543.8**	**0.0**	**0.0**
India	159.1	418.3	577.4	576.9	0.6	0.4	605.3	893.1	1 498.4	1 498.4	0.0	0.0
Nepal	2.0	12.6	14.6	15.1	0.0	0.5	12.3	28.4	40.7	40.7	0.0	0.0
Sri Lanka	0.3	1.4	1.7	1.8	0.0	0.1	1.0	3.7	4.7	4.7	0.0	0.0
Sub-Saharan Africa	**279.5**	**434.0**	**713.5**	**667.4**	**51.2**	**6.2**	**937.6**	**881.4**	**1 819.0**	**1 746.4**	**74.6**	**2.0**
Angola	21.7	17.9	39.6	28.6	11.0	0.0	85.5	28.9	114.4	103.4	11.0	0.0
Benin	1.6	2.5	4.1	4.0	0.1	0.0	4.5	4.0	8.5	8.5	0.0	0.0
Botswana	1.5	1.0	2.5	0.2	2.3	0.0	2.2	0.6	2.8	0.4	2.4	0.0
Burkina Faso	1.7	7.1	8.8	8.7	0.1	0.0	13.0	24.1	37.1	37.1	0.0	0.0
Burundi	0.3	3.7	4.0	4.0	0.0	0.0	3.0	12.2	15.2	15.2	0.0	0.0
Cameroon	8.6	7.6	16.2	14.8	1.4	0.0	18.7	7.4	26.1	24.6	1.5	0.0
Central African Republic	5.0	7.2	12.2	12.2	0.0	0.0	17.6	16.9	34.5	34.5	0.0	0.0
Chad	0.1	0.4	0.5	0.4	0.0	0.0	0.8	1.0	1.8	1.8	0.0	0.0
Congo	4.2	3.1	7.3	2.1	5.3	0.0	21.0	9.2	30.2	16.5	13.7	0.0
Cote d'Ivoire	5.5	7.6	13.1	12.4	0.7	0.0	18.4	11.8	30.2	29.2	1.0	0.0
Dem. Rep. of the Congo	8.5	18.5	27.0	26.1	0.9	0.0	62.8	64.5	127.3	122.3	5.0	0.0

COUNTRY	PORK 2000						PORK 2030					
	Consumption			Production	Import	Export	Consumption			Production	Import	Export
	Urban	Rural	Total				Urban	Rural	Total			
Ethiopia	0.2	1.3	1.5	1.5	0.0	0.0	0.7	2.4	3.1	3.1	0.0	0.0
Gabon	8.4	1.2	9.6	3.1	6.5	0.0	19.1	1.3	20.4	7.9	12.5	0.0
Gambia	0.2	0.1	0.3	0.3	0.0	0.0	0.5	0.2	0.7	0.5	0.2	0.0
Ghana	6.2	7.0	13.2	10.6	2.6	0.0	21.6	11.0	32.6	26.6	6.0	0.0
Guinea	0.6	1.1	1.7	1.6	0.1	0.0	3.2	2.8	6.0	6.0	0.0	0.0
Kenya	2.3	9.1	11.4	12.2	0.1	0.9	12.1	24.9	37.0	37.0	0.0	0.0
Lesotho	0.6	2.1	2.7	2.7	0.0	0.0	2.1	3.0	5.1	5.1	0.0	0.0
Liberia	2.8	2.3	5.1	4.3	0.8	0.0	9.0	3.3	12.3	11.3	1.0	0.0
Madagascar	19.5	46.7	66.2	66.0	0.1	0.0	72.3	95.0	167.3	167.3	0.0	0.0
Malawi	3.1	17.6	20.7	20.6	0.1	0.0	22.3	47.1	69.4	69.4	0.0	0.0
Mali	0.7	1.7	2.4	2.3	0.1	0.0	3.0	3.3	6.3	6.3	0.0	0.0
Mauritius	1.7	1.1	2.8	0.8	2.0	0.0	2.9	1.4	4.3	1.3	3.0	0.0
Mozambique	4.1	9.1	13.2	12.8	0.3	0.0	15.9	13.4	29.3	29.0	0.3	0.0
Niger	0.2	1.2	1.4	1.4	0.0	0.0	0.6	2.4	3.0	3.0	0.0	0.0
Nigeria	69.8	90.8	160.6	158.6	2.0	0.0	265.2	148.2	413.4	408.4	5.0	0.0
Rwanda	0.6	2.6	3.2	3.2	0.0	0.0	2.5	5.6	8.1	8.1	0.0	0.0
Senegal	2.9	4.0	6.9	6.7	0.2	0.0	11.8	10.2	22.0	22.0	0.0	0.0
Sierra Leone	0.9	1.5	2.4	2.3	0.0	0.0	2.7	2.6	5.3	5.3	0.0	0.0
Somalia	0.0	0.1	0.1	0.1	0.0	0.0	0.1	0.2	0.3	0.0	0.3	0.0
South Africa	71.0	54.4	125.4	116.3	11.3	2.2	115.9	47.7	163.6	153.6	10.0	0.0
Swaziland	0.6	1.7	2.3	1.1	1.9	1.7	1.2	2.1	3.3	1.6	1.7	0.0

COUNTRY	PORK 2000						PORK 2030					
	Consumption			Production	Import	Export	Consumption			Production	Import	Export
	Urban	Rural	Total				Urban	Rural	Total			
Togo	1.9	2.7	4.6	4.5	0.2	0.1	6.5	4.1	10.6	10.6	0.0	0.0
Uganda	9.2	68.7	77.9	77.8	0.2	0.0	52.7	209.7	262.4	262.4	0.0	0.0
United Republic of Tanzania	2.9	10.4	13.3	12.8	0.5	0.0	17.3	28.2	45.5	45.5	0.0	0.0
Zambia	3.8	7.0	10.8	10.6	0.2	0.0	9.6	11.7	21.3	21.3	0.0	0.0
Zimbabwe	6.2	12.3	18.5	19.7	0.2	1.3	19.4	18.9	38.3	40.3	0.0	2.0
High income countries	**10 868.9**	**2 638.3**	**13 507.2**	**13 285.6**	**2 202.6**	**1 731.4**	**14 243.5**	**2 198.5**	**16 442.0**	**16 413.9**	**1 525.6**	**1 286.4**
Australia	312.4	44.9	357.3	366.1	35.7	44.5	460.4	40.1	500.5	500.5	0.0	0.0
Canada	799.0	137.4	936.4	2 029.6	93.4	1 036.3	982.0	127.4	1 109.4	2 300.0	0.0	1 031.4
Iceland	4.1	0.8	4.9	4.9	0.0	0.0	6.1	1.8	7.9	7.9	0.0	0.0
Israel	9.3	0.9	10.2	10.4	0.0	0.1	16.6	1.3	17.9	17.9	0.0	0.0
Japan	1 479.6	768.2	2 247.8	1 257.6	1 035.5	0.9	1 777.9	642.4	2 420.3	1 188.1	1 280.0	0.0
New Zealand	60.1	9.3	69.4	47.5	22.7	0.4	78.7	9.5	88.2	63.2	25.0	0.0
Norway	82.5	20.9	103.4	107.0	2.4	6.0	106.5	22.7	129.2	133.0	0.0	5.0
Republic of Korea	815.5	201.6	1 017.1	946.7	162.7	64.4	1 427.6	223.8	1 651.4	1 451.4	200.0	0.0
Saudi Arabia	0.2	0.2	0.4	0.0	1.3	1.0	0.4	0.4	0.8	0.0	0.8	0.0
Switzerland	190.2	55.8	246.0	228.6	17.7	0.3	172.2	40.8	213.0	197.1	15.8	0.0
Trinidad and Tobago	0.9	4.0	4.9	1.8	3.6	0.6	2.0	4.4	6.4	2.4	4.0	0.0
United States of America	7 115.2	1 394.2	8 509.4	8 285.4	827.6	576.9	9 213.2	1 083.8	10 297.0	10 552.4	0.0	250.0

Table C 8. Change in consumption and production of pork between 2000 and 2030 (absolute change is in thousands of metric tonnes, proportional change in percentage).

COUNTRY	PORK, CHANGE BETWEEN 2000 AND 2030													
	Consumption								Production		Import		Export	
	Absolute change			Percent change			Proportion of change due to change in consump. rates %	Proportion of change due to change in population %	Absolute change	Percent change	Absolute change	Percent change	Absolute change	Percent change
	Urban	Rural	Total	Urban	Rural	Total								
East Asia and Pacific	**25 113.4**	**2 961.3**	**28 074.7**	**113.4**	**13.2**	**63.0**			**27 943.0**	**62.4**	**-166.2**	**-88.3**	**-309.8**	**-70.4**
Cambodia	113.0	135.2	248.2	554.1	159.6	236.2	37.1	33.5	248.2	236.2	0.0		0.0	
China	20 951.9	1 098.1	22 050.0	101.6	5.5	54.2	65.4	25.5	21 861.9	53.5	-148.5	-100.0	-340.3	-100.0
Dem. People's Rep. of Korea	96.8	12.0	108.8	107.6	23.6	77.2	75.1	15.8	108.1	77.4	0.7	53.8	0.0	
Indonesia	952.2	245.8	1 198.0	472.2	89.4	251.4	66.8	12.4	1 201.4	243.6	-1.9	-100.0	0.9	4.7
Lao People's Dem. Rep.	40.9	18.6	59.5	563.6	71.3	178.7	32.7	42.4	59.5	178.7	0.0		0.0	
Malaysia	185.6	-0.2	185.4	174.6	-0.4	109.7	33.8	48.3	188.4	113.4	-8.1	-100.0	-5.0	-100.0
Myanmar	115.3	77.6	192.9	357.8	95.3	169.8	64.3	17.1	193.0	170.0	-0.2	-100.0	0.0	
Philippines	1 257.4	146.5	1 403.9	206.3	33.8	134.6	41.7	37.4	1 411.8	139.1	-8.4	-29.6	-0.5	-100.0
Thailand	301.8	209.3	511.1	205.3	64.9	108.9	63.1	21.9	518.9	110.0	-0.1	-100.0	0.0	0.0
Viet Nam	1 098.4	1 018.5	2 116.9	346.4	101.9	160.8	54.8	24.1	2 151.8	155.8	0.3	-100.0	35.1	54.1
Eastern Europe and Central Asia	**144.2**	**-32.1**	**112.1**	**9.6**	**-5.9**	**5.5**			**441.2**	**29.1**	**-203.7**	**-50.5**	**-10.2**	**-98.1**
Russian Federation	144.2	-32.1	112.1	9.6	-5.9	5.5	515.4	-323.8	441.1	29.1	-203.6	-50.4	-10.2	-100.0
Turkey	0.1	-0.1	0.0	78.1	-78.1	0.0			0.1	50.0	-0.1	-100.0	0.0	0.0

COUNTRY	PORK, CHANGE BETWEEN 2000 AND 2030													
	Consumption								Production		Import		Export	
	Absolute change			Percent change			Proportion of change due to change in consump. rates %	Proportion of change due to change in population %	Absolute change	Percent change	Absolute change	Percent change	Absolute change	Percent change
	Urban	Rural	Total	Urban	Rural	Total								
Latin America/ Caribbean	**4 127.8**	**277.6**	**4 405.4**	**123.7**	**25.7**	**99.8**			**4 307.1**	**99.5**	**684.8**	**163.6**	**579.3**	**186.4**
Argentina	106.5	-5.8	100.7	40.6	-25.1	35.3	9.1	88.1	97.2	46.6	2.7	3.5	-0.8	-100.0
Bolivia	74.0	9.4	83.4	150.9	35.0	109.9	28.6	54.3	83.7	110.7	-0.3	-100.0	0.0	
Brazil	2 146.9	110.0	2 256.9	166.8	32.2	138.5	61.0	21.1	2 890.5	156.6	-1.1	-100.0	632.0	289.9
Chile	159.8	-1.9	157.9	75.5	-5.2	63.6	35.6	52.6	176.6	65.5	-3.1	-100.0	15.6	63.9
Colombia	129.5	20.2	149.7	190.1	79.0	159.8	50.0	27.8	133.7	154.9	16.0	216.2	0.0	
Costa Rica	33.9	5.7	39.6	183.2	46.1	128.2	41.0	38.6	38.7	121.7	-1.5	-100.0	-2.1	-100.0
Cuba	36.7	21.0	57.7	45.9	31.6	39.4	95.7	3.1	47.0	35.3	12.3	104.2	1.5	-100.0
Dominican Republic	87.1	8.0	95.1	221.5	33.6	151.0	56.8	23.3	97.5	160.9	-2.4	-100.0	0.0	
Ecuador	101.7	7.7	109.4	147.0	16.4	94.3	41.6	42.0	110.0	95.3	-0.7	-100.0	-0.1	-100.0
El Salvador	11.1	3.0	14.1	154.7	58.8	114.6	44.8	36.5	11.3	139.5	2.2	45.8	-0.7	-100.0
Guatemala	42.5	19.1	61.6	285.2	106.3	187.2	30.0	44.8	60.0	244.9	-0.3	-2.9	-1.9	-100.0
Guyana	0.6	0.7	1.3	217.8	134.8	162.5	114.9	-5.2	0.0	0.0	1.3	433.3	0.0	
Haiti	48.2	6.8	55.0	373.6	32.7	162.7	55.1	23.7	55.0	191.6	0.0	0.0	0.0	
Honduras	11.9	3.3	15.2	155.5	35.4	89.9	16.1	73.3	14.6	153.7	0.5	6.7	-0.1	-100.0
Jamaica	3.2	0.5	3.7	75.4	13.6	45.7	24.5	67.9	5.2	78.8	-1.6	-100.0	-0.1	-100.0
Mexico	809.2	41.1	850.3	89.0	13.5	70.1	37.0	50.0	146.3	14.4	641.3	247.9	-62.6	-100.0

COUNTRY	PORK, CHANGE BETWEEN 2000 AND 2030													
	Consumption								Production		Import		Export	
	Absolute change			Percent change			Proportion of change due to change in consump. rates %	Proportion of change due to change in population %	Absolute change	Percent change	Absolute change	Percent change	Absolute change	Percent change
	Urban	Rural	Total	Urban	Rural	Total								
Nicaragua	14.2	6.2	20.4	400.9	217.2	318.8	43.3	23.8	20.9	354.2	-1.4	-100.0	-0.9	-100.0
Panama	41.8	2.5	44.3	200.7	23.5	140.6	40.7	37.7	45.1	203.2	-0.2	-2.0	-0.2	-100.0
Paraguay	82.7	2.6	85.3	107.5	4.1	60.7	-18.3	133.1	86.0	61.5	-0.8	-100.0	-0.1	-100.0
Peru	110.9	20.7	131.6	187.7	118.2	171.8	52.2	25.2	115.8	122.9	20.8	4 160.0	-0.1	-100.0
Suriname	1.1	0.0	1.1	78.0	11.0	68.8	67.9	21.9	0.9	81.8	0.3	75.0	0.0	
Uruguay	10.1	-0.5	9.6	29.6	-15.2	26.0	24.6	70.8	10.0	37.7	-0.4	-3.8	0.0	
Venezuela	64.6	-3.1	61.5	64.4	-20.5	53.3	1.1	98.3	61.1	52.6	1.2	120.0	-0.1	-100.0
Middle East/ North Africa	**7.5**	**1.0**	**8.5**	**60.5**	**24.0**	**51.5**			**3.4**	**54.0**	**5.6**	**51.9**	**-0.3**	**-100.0**
Algeria	0.0	0.0	0.0	-22.6	-382.6	0.0			0.1	100.0	0.0		0.0	
Egypt	1.0	0.8	1.8	88.1	40.4	58.1	-3.1	104.9	1.8	58.1	0.0		0.0	
Jordan	0.0	0.0	0.0	79.8	-52.1	0.0			0.0		0.0	0.0	-0.2	-100.0
Lebanon	6.3	0.1	6.4	58.5	7.2	51.6	23.9	67.7	1.2	50.0	5.7	53.8	-0.1	-100.0
Morocco	0.2	0.1	0.3	80.4	12.9	42.9	-5.0	107.4	0.4	66.7	-0.1	-100.0	0.0	
Tunisia	0.0	0.0	0.0	0.0	0.0	0.0			-0.1	-100.0	0.0		0.0	
South Asia	**457.3**	**492.8**	**950.1**	**283.5**	**114.0**	**160.0**			**950.0**	**160.0**	**-0.6**	**-100.0**	**-1.0**	**-100.0**
India	446.2	474.8	921.0	280.5	113.5	159.5	54.1	24.6	921.5	159.7	-0.6	-100.0	-0.4	-100.0
Nepal	10.4	15.7	26.1	526.8	124.6	178.8	34.1	41.0	25.6	169.5	0.0		-0.5	-100.0

COUNTRY	PORK, CHANGE BETWEEN 2000 AND 2030													
	Consumption								Production		Import		Export	
	Absolute change			Percent change			Proportion of change due to change in consump. rates %	Proportion of change due to change in population %	Absolute change	Percent change	Absolute change	Percent change	Absolute change	Percent change
	Urban	Rural	Total	Urban	Rural	Total								
Sri Lanka	0.7	2.3	3.0	261.8	159.5	176.5	77.8	9.4	2.9	161.1	0.0		-0.1	-100.0
Sub-Saharan Africa	**658.1**	**447.4**	**1 105.5**	**235.4**	**103.1**	**154.9**			**1 079.0**	**161.7**	**23.4**	**45.7**	**-4.2**	**-67.7**
Angola	63.9	10.9	74.8	294.7	61.0	188.9	13.4	69.1	74.8	261.5	0.0	0.0	0.0	
Benin	3.0	1.4	4.4	191.2	55.8	107.3	6.3	87.8	4.5	112.5	-0.1	-100.0	0.0	
Botswana	0.6	-0.3	0.3	41.2	-33.5	12.0	196.8	-78.3	0.2	100.0	0.1	4.3	0.0	
Burkina Faso	11.3	17.0	28.3	646.9	241.2	321.6	24.8	41.8	28.4	326.4	-0.1	-100.0	0.0	
Burundi	2.7	8.5	11.2	761.1	234.1	280.0	26.7	41.9	11.2	280.0	0.0		0.0	
Cameroon	10.1	-0.2	9.9	117.3	-2.4	61.1	19.5	72.0	9.8	66.2	0.1	7.1	0.0	
Central African Republic	12.6	9.7	22.3	250.0	135.5	182.8	50.2	26.0	22.3	182.8	0.0		0.0	
Chad	0.6	0.7	1.3	486.4	177.8	260.0	23.0	48.2	1.4	350.0	0.0		0.0	
Congo	16.8	6.1	22.9	403.4	194.4	313.7	28.3	38.0	14.4	685.7	8.4	158.5	0.0	
Cote d'Ivoire	12.9	4.2	17.1	232.2	55.9	130.5	43.6	36.0	16.8	135.5	0.3	42.9	0.0	
Dem. Rep. of the Congo	54.3	46.0	100.3	635.9	249.2	371.5	30.8	32.3	96.2	368.6	4.1	455.6	0.0	
Ethiopia	0.5	1.1	1.6	238.4	84.5	106.7	6.2	88.1	1.6	106.7	0.0		0.0	
Gabon	10.7	0.1	10.8	126.3	12.1	112.5	27.3	55.7	4.8	154.8	6.0	92.3	0.0	
Gambia	0.3	0.1	0.4	210.2	38.9	133.3	23.2	58.7	0.2	66.7	0.2	20.0	0.0	
Ghana	15.4	4.0	19.4	246.8	57.8	147.0	32.8	45.3	16.0	150.9	3.4	130.8	0.0	

COUNTRY	PORK, CHANGE BETWEEN 2000 AND 2030													
	Consumption								Production		Import		Export	
	Absolute change			Percent change			Proportion of change due to change in consump. rates %	Proportion of change due to change in population %	Absolute change	Percent change	Absolute change	Percent change	Absolute change	Percent change
	Urban	Rural	Total	Urban	Rural	Total								
Guinea	2.6	1.7	4.3	426.0	158.0	252.9	36.3	33.2	4.4	275.0	-0.1	-100.0	0.0	
Kenya	9.8	15.8	25.6	419.8	174.4	224.6	62.7	15.5	24.8	203.3	-0.1	-100.0	-0.9	-100.0
Lesotho	1.6	0.8	2.4	289.6	37.5	88.9	131.2	-14.4	2.4	88.9	0.0		0.0	
Liberia	6.2	1.0	7.2	220.7	44.8	141.2	2.6	93.9	7.0	162.8	0.2	25.0	0.0	
Madagascar	52.7	48.4	101.1	269.7	103.7	152.7	13.5	71.7	101.3	153.5	-0.1	-100.0	0.0	
Malawi	19.1	29.6	48.7	611.5	168.2	235.3	39.1	31.7	48.8	236.9	-0.1	-100.0	0.0	
Mali	2.3	1.6	3.9	326.0	95.8	162.5	3.5	91.3	4.0	173.9	-0.1	-100.0	0.0	
Mauritius	1.2	0.3	1.5	67.3	32.0	53.6	49.3	40.1	0.5	62.5	1.0	50.0	0.0	
Mozambique	11.7	4.4	16.1	283.7	48.3	122.0	40.1	40.2	16.2	126.6	0.0	0.0	0.0	
Niger	0.4	1.2	1.6	181.6	101.2	114.3	-21.1	159.5	1.6	114.3	0.0		0.0	
Nigeria	195.4	57.4	252.8	279.8	63.2	157.4	27.3	50.9	249.8	157.5	3.0	150.0	0.0	
Rwanda	2.0	2.9	4.9	356.4	110.5	153.1	28.9	49.3	4.9	153.1	0.0		0.0	
Senegal	8.9	6.2	15.1	310.0	153.4	218.8	35.2	36.6	15.3	228.4	-0.2	-100.0	0.0	
Sierra Leone	1.8	1.1	2.9	194.1	76.2	120.8	15.8	70.6	3.0	130.4	0.0		0.0	
Somalia	0.1	0.1	0.2	307.8	162.5	200.0	3.6	89.8	-0.1	-100.0	0.3	30.0	0.0	
South Africa	44.9	-6.7	38.2	63.2	-12.3	30.5	118.3	-13.5	37.3	32.1	-1.3	-11.5	-2.2	-100.0
Swaziland	0.7	0.3	1.0	119.1	18.6	43.5	107.4	-5.1	0.5	45.5	-0.2	-10.5	-1.7	-100.0
Togo	4.5	1.5	6.0	234.7	55.1	130.4	22.5	59.9	6.1	135.6	-0.2	-100.0	-0.1	-100.0

COUNTRY	PORK, CHANGE BETWEEN 2000 AND 2030													
	Consumption								Production		Import		Export	
	Absolute change			Percent change			Proportion of change due to change in consump. rates %	Proportion of change due to change in population %	Absolute change	Percent change	Absolute change	Percent change	Absolute change	Percent change
	Urban	Rural	Total	Urban	Rural	Total								
Uganda	43.5	141.0	184.5	471.5	205.3	236.8	10.0	72.7	184.6	237.3	-0.2	-100.0	0.0	
United Republic of Tanzania	14.4	17.8	32.2	487.3	172.4	242.1	45.2	26.2	32.7	255.5	-0.5	-100.0	0.0	
Zambia	5.8	4.7	10.5	151.8	67.6	97.2	35.9	47.6	10.7	100.9	-0.2	-100.0	0.0	
Zimbabwe	13.1	6.7	19.8	210.8	54.3	107.0	98.0	1.0	20.6	104.6	-0.2	-100.0	0.7	53.8
High income countries	**3 374.6**	**-439.8**	**2 934.8**	**31.0**	**-16.7**	**21.7**			**3 128.3**	**23.5**	**-677.0**	**-30.7**	**-445.0**	**-25.7**
Australia	148.0	-4.8	143.2	47.4	-10.7	40.1	31.3	61.0	134.4	36.7	-35.7	-100.0	-44.5	-100.0
Canada	182.9	-9.9	173.0	22.9	-7.2	18.5	-7.8	109.3	270.4	13.3	-93.4	-100.0	-4.9	-0.5
Iceland	2.0	1.0	3.0	50.0	116.1	61.2	61.7	27.8	3.0	61.2	0.0		0.0	
Israel	7.3	0.4	7.7	78.8	42.5	75.5	24.1	64.2	7.5	72.1	0.0		-0.1	-100.0
Japan	298.4	-125.9	172.5	20.2	-16.4	7.7	169.6	-61.6	-69.5	-5.5	244.5	23.6	-0.9	-100.0
New Zealand	18.6	0.2	18.8	30.9	2.6	27.1	29.1	65.8	15.7	33.1	2.3	10.1	-0.4	-100.0
Norway	24.0	1.8	25.8	29.1	8.6	25.0	55.0	39.5	26.0	24.3	-2.4	-100.0	-1.0	-16.7
Republic of Korea	612.2	22.1	634.3	75.1	11.0	62.4	83.3	11.0	504.7	53.3	37.3	22.9	-64.4	-100.0
Saudi Arabia	0.2	0.2	0.4	108.4	93.0	100.0	2.6	95.0	0.0		-0.5	-38.5	-1.0	-100.0
Switzerland	-17.9	-15.1	-33.0	-9.4	-27.0	-13.4	49.9	53.7	-31.5	-13.8	-1.9	-10.7	-0.3	-100.0
Trinidad and Tobago	1.0	0.5	1.5	112.0	11.7	30.6	87.8	9.6	0.6	33.3	0.4	11.1	-0.6	-100.0
United States of America	2 097.9	-310.3	1 787.6	29.5	-22.3	21.0	-32.8%	142.6%	2 267.0	27.4	-827.6	-100.0	-326.9	-56.7

Table C 9. Consumption and production of poultry meat in 2000 and 2030 (all measures are in thousands of metric tonnes).

COUNTRY	POULTRY MEAT 2000						POULTRY MEAT 2030					
	Consumption			Production	Import	Export	Consumption			Production	Import	Export
	Urban	Rural	Total				Urban	Rural	Total			
East Asia and Pacific	**7 728.5**	**7 979.9**	**15 708.4**	**15 798.2**	**888.2**	**930.8**	**25 030.6**	**13 199.6**	**38 230.2**	**38 221.2**	**690.8**	**600.0**
Cambodia	4.9	20.4	25.3	25.1	0.1	0.0	32.3	53.4	85.7	85.7	0.0	0.0
China	6 108.3	5 950.5	12 058.8	11 775.1	788.0	499.7	17 660.1	9 008.0	26 668.1	26 171.5	500.0	0.0
Dem. People's Rep. of Korea	17.4	9.6	27.0	27.0	0.0	0.0	59.9	20.0	79.9	79.9	0.0	0.0
Indonesia	321.7	437.8	759.5	751.0	11.4	2.9	2 487.6	1 123.5	3 611.1	3 461.1	150.0	0.0
Lao People's Dem. Rep.	2.7	9.6	12.3	12.2	0.1	0.0	31.2	28.6	59.8	59.8	0.0	0.0
Malaysia	520.6	306.0	826.6	835.6	61.8	50.4	1 449.4	310.1	1 759.5	1 789.8	0.0	0.0
Myanmar	56.5	142.0	198.5	198.3	0.2	0.0	369.0	396.4	765.4	765.4	0.0	0.0
Philippines	340.8	242.6	583.4	559.7	23.9	0.2	1 537.0	477.3	2 014.3	1 973.5	40.8	0.0
Thailand	270.9	593.7	864.6	1 262.8	1.6	377.6	908.2	1 075.1	1 983.3	2 631.4	0.0	600.0
Viet Nam	84.7	267.7	352.4	351.4	1.1	0.0	495.9	707.2	1 203.1	1 203.1	0.0	0.0
Eastern Europe and Central Asia	**1 528.5**	**619.4**	**2 147.9**	**1 428.2**	**780.7**	**10.0**	**3 443.5**	**1 014.1**	**4 457.6**	**3 694.3**	**800.0**	**36.7**
Russian Federation	1 115.2	401.5	1 516.7	796.4	774.5	3.2	1 832.2	562.1	2 394.3	1 594.3	800.0	0.0
Turkey	413.3	217.9	631.2	631.8	6.2	6.8	1 611.3	452.0	2 063.3	2 100.0	0.0	36.7
Latin America/Caribbean	**8 843.0**	**2 621.8**	**11 464.8**	**12 237.8**	**654.9**	**1 141.8**	**21 905.7**	**3 992.7**	**25 898.4**	**27 974.5**	**1 138.4**	**3 081.9**
Argentina	933.4	82.0	1 015.4	992.2	53.7	30.4	1 671.2	78.8	1 750.0	1 740.0	10.0	0.0
Bolivia	90.6	48.5	139.1	138.9	0.7	0.5	327.8	97.0	424.8	424.8	0.0	0.0
Brazil	3 969.4	1 052.5	5 021.9	6 056.0	4.3	1 038.4	7 847.8	1 035.3	8 883.1	11 883.1	0.0	3 000.0
Chile	301.8	52.4	354.2	381.9	0.7	34.0	613.0	57.2	670.2	740.0	0.0	75.5

COUNTRY	POULTRY MEAT 2000						POULTRY MEAT 2030					
	Consumption			Production	Import	Export	Consumption			Production	Import	Export
	Urban	Rural	Total				Urban	Rural	Total			
Colombia	394.9	147.6	542.5	515.5	33.7	7.7	1 509.3	350.4	1 859.7	1 759.7	100.0	0.0
Costa Rica	43.0	28.8	71.8	73.6	1.4	3.5	139.6	48.3	187.9	193.9	0.0	6.0
Cuba	59.0	49.3	108.3	59.8	48.4	0.0	129.5	97.3	226.8	155.0	71.8	0.0
Dominican Republic	126.5	76.1	202.6	198.8	3.8	0.0	354.9	88.6	443.5	443.5	0.0	0.0
Ecuador	95.6	64.4	160.0	161.2	3.2	4.4	394.5	125.5	520.0	520.0	0.0	0.0
El Salvador	26.8	19.2	46.0	47.7	3.3	5.0	103.7	45.9	149.6	150.0	0.0	0.4
Guatemala	69.9	84.1	154.0	131.3	25.8	3.0	370.4	238.7	609.1	559.1	50.0	0.0
Guyana	6.3	13.0	19.3	12.1	7.2	0.0	12.6	18.7	31.3	26.7	4.6	0.0
Haiti	11.5	18.6	30.1	8.1	22.1	0.0	53.4	24.3	77.7	37.7	40.0	0.0
Honduras	37.6	45.0	82.6	72.9	9.7	0.1	164.0	103.9	267.9	257.9	10.0	0.0
Jamaica	57.9	53.4	111.3	78.6	33.0	0.2	126.7	76.1	202.8	177.8	25.0	0.0
Mexico	1 658.8	555.7	2 214.5	1 855.9	368.1	9.6	5 004.2	1 007.4	6 011.6	5 211.6	800.0	0.0
Nicaragua	26.6	21.5	48.1	44.0	4.8	0.7	129.9	66.5	196.4	191.4	5.0	0.0
Panama	48.5	24.8	73.3	75.9	4.2	0.4	156.7	32.9	189.6	186.6	5.0	0.0
Paraguay	28.5	23.3	51.8	47.6	4.3	0.0	133.7	55.3	189.0	183.0	6.0	0.0
Peru	246.7	73.2	319.9	594.3	11.5	1.8	1 001.2	225.4	1 226.6	1 362.9	0.0	0.0
Suriname	11.0	1.8	12.8	4.3	7.9	0.0	17.8	1.8	19.6	8.6	11.0	0.0
Uruguay	48.2	4.1	52.3	54.7	0.9	0.5	91.5	5.1	96.6	96.6	0.0	0.0
Venezuela	550.5	82.5	633.0	632.5	2.2	1.6	1 552.4	112.2	1 664.6	1 664.6	0.0	0.0
Middle East/North Africa	**1 513.6**	**1 079.9**	**2 593.5**	**2 534.3**	**97.2**	**11.3**	**5 971.5**	**2 917.6**	**8 889.1**	**8 413.3**	**493.9**	**0.0**
Algeria	160.5	68.1	228.6	226.5	2.1	0.0	555.5	119.8	675.3	650.0	25.3	0.0

COUNTRY	POULTRY MEAT 2000						POULTRY MEAT 2030					
	Consumption			Production	Import	Export	Consumption			Production	Import	Export
	Urban	Rural	Total				Urban	Rural	Total			
Egypt	256.7	350.4	607.1	599.6	8.5	1.1	1 078.6	1 103.6	2 182.2	2 172.2	10.0	0.0
Iran (Islamic Republic of)	536.5	292.7	829.2	823.6	13.6	8.0	1 896.4	530.7	2 427.1	2 417.1	10.0	0.0
Iraq	33.8	15.0	48.8	46.5	2.2	0.0	467.1	184.5	651.6	500.0	151.6	0.0
Jordan	91.9	25.6	117.5	114.3	3.5	0.3	249.3	54.9	304.2	304.2	0.0	0.0
Lebanon	66.0	10.2	76.2	99.0	4.6	0.4	153.0	15.9	168.9	165.4	5.0	0.0
Libyan Arab Jamahiriya	75.9	23.0	98.9	96.9	2.0	0.0	216.2	43.8	260.0	271.6	5.0	0.0
Morocco	137.2	120.0	257.2	243.9	13.3	0.0	469.9	242.8	712.7	692.7	20.0	0.0
Syrian Arab Republic	58.8	54.5	113.3	112.8	0.6	0.1	395.2	221.7	616.9	606.9	10.0	0.0
Tunisia	66.1	38.3	104.4	103.3	2.4	1.4	212.6	70.6	283.2	283.2	0.0	0.0
Yemen	30.2	82.1	112.3	67.9	44.4	0.0	277.8	329.2	607.0	350.0	257.0	0.0
South Asia	**444.2**	**1 141.6**	**1 585.8**	**1 581.9**	**6.7**	**2.7**	**5 434.9**	**7 642.1**	**13 077.0**	**13 049.0**	**28.0**	**0.0**
Afghanistan	3.4	9.7	13.1	13.1	0.0	0.0	56.6	85.6	142.2	132.2	10.0	0.0
Bangladesh	27.0	86.5	113.5	110.6	3.0	0.0	313.8	457.3	771.1	771.1	0.0	0.0
India	292.6	758.0	1 050.6	1 052.0	0.0	1.4	4 029.7	5 886.3	9 916.0	9 916.0	0.0	0.0
Nepal	1.8	11.2	13.0	12.5	0.6	0.0	25.0	56.5	81.5	71.5	10.0	0.0
Pakistan	107.9	218.7	326.6	326.8	0.9	1.2	956.4	971.4	1 927.8	1 927.8	0.0	0.0
Sri Lanka	11.6	57.4	69.0	66.9	2.2	0.1	53.3	185.1	238.4	230.4	8.0	0.0
Sub-Saharan Africa	**855.6**	**1 051.4**	**1 907.0**	**1 656.7**	**283.6**	**34.5**	**2 899.7**	**2 242.4**	**5 142.1**	**4 586.8**	**562.3**	**7.0**
Angola	24.3	20.1	44.4	7.5	36.9	0.0	128.1	43.4	171.5	36.5	135.0	0.0
Benin	22.6	36.1	58.7	11.6	50.3	3.2	64.8	56.1	120.9	35.9	85.0	0.0
Botswana	5.5	3.6	9.1	3.4	5.6	0.0	13.8	4.1	17.9	12.9	5.0	0.0

COUNTRY	POULTRY MEAT 2000						POULTRY MEAT 2030					
	Consumption			Production	Import	Export	Consumption			Production	Import	Export
	Urban	Rural	Total				Urban	Rural	Total			
Burkina Faso	5.3	21.1	26.4	27.8	0.2	1.5	34.0	62.5	96.5	96.5	0.0	0.0
Burundi	0.5	5.5	6.0	5.9	0.1	0.0	4.9	19.7	24.6	24.6	0.0	0.0
Cameroon	19.0	16.9	35.9	25.6	10.3	0.0	62.6	24.4	87.0	77.0	10.0	0.0
Central African Republic	1.2	1.8	3.0	3.0	0.0	0.0	3.4	3.2	6.6	6.6	0.0	0.0
Chad	1.3	3.4	4.7	4.7	0.0	0.0	6.2	8.0	14.2	14.2	0.0	0.0
Congo	8.7	6.5	15.2	4.4	10.8	0.0	30.5	13.3	43.8	23.8	20.0	0.0
Cote d'Ivoire	28.5	38.2	66.7	63.3	3.5	0.1	104.3	65.5	169.8	165.8	4.0	0.0
Dem. Rep. of the Congo	7.3	15.9	23.2	11.4	11.9	0.0	106.5	107.5	214.0	114.0	100.0	0.0
Eritrea	0.3	1.6	1.9	1.7	0.2	0.0	2.7	5.2	7.9	7.6	0.3	0.0
Ethiopia	6.8	34.8	41.6	41.5	0.2	0.0	54.6	136.5	191.1	191.1	0.0	0.0
Gabon	15.4	2.1	17.5	3.6	13.9	0.0	38.3	2.6	40.9	10.7	30.2	0.0
Gambia	1.3	0.9	2.2	0.9	1.3	0.0	5.3	1.7	7.0	3.0	4.0	0.0
Ghana	16.5	18.4	34.9	18.7	16.2	0.0	87.3	43.3	130.6	95.6	35.0	0.0
Guinea	1.8	3.0	4.8	4.1	0.7	0.0	8.6	7.7	16.3	13.3	3.0	0.0
Kenya	11.3	43.5	54.8	56.9	0.1	2.2	54.4	110.2	164.6	166.6	0.0	2.0
Lesotho	1.2	4.6	5.8	1.8	4.0	0.0	3.7	4.9	8.6	4.6	4.0	0.0
Liberia	5.3	4.3	9.6	6.9	2.7	0.0	29.9	11.1	41.0	41.0	0.0	0.0
Madagascar	17.9	42.8	60.7	60.5	0.2	0.0	94.0	123.5	217.5	217.5	0.0	0.0
Malawi	2.3	13.1	15.4	14.8	0.5	-0.2	11.4	24.3	35.7	34.7	1.0	0.0
Mali	8.4	20.2	28.6	28.6	0.1	0.1	50.5	55.6	106.1	106.1	0.0	0.0
Mauritania	3.0	3.5	6.5	4.1	2.3	0.0	9.3	7.1	16.4	13.4	3.0	0.0

COUNTRY	POULTRY MEAT 2000						POULTRY MEAT 2030					
	Consumption			Production	Import	Export	Consumption			Production	Import	Export
	Urban	Rural	Total				Urban	Rural	Total			
Mauritius	13.4	8.6	22.0	21.5	0.8	0.3	35.0	17.5	52.5	52.5	0.0	0.0
Mozambique	12.2	26.4	38.6	34.2	4.4	0.0	69.2	58.6	127.8	123.4	4.4	0.0
Niger	4.3	22.3	26.6	26.5	0.1	0.0	21.4	69.6	91.0	91.0	0.0	0.0
Nigeria	77.4	100.1	177.5	178.4	-0.9	0.0	437.6	245.8	683.4	650.0	33.4	0.0
Rwanda	0.3	1.3	1.6	1.6	0.0	0.0	1.7	3.7	5.4	5.4	0.0	0.0
Senegal	27.8	38.3	66.1	63.9	2.3	0.1	123.7	104.8	228.5	226.5	2.0	0.0
Sierra Leone	4.0	6.5	10.5	9.6	0.9	0.0	12.5	12.1	24.6	23.6	1.0	0.0
Somalia	1.2	2.2	3.4	3.4	0.0	0.0	21.1	20.2	41.3	36.3	5.0	0.0
South Africa	443.2	339.5	782.7	706.4	87.2	12.5	868.0	354.9	1 222.9	1 162.9	60.0	0.0
Sudan	11.5	18.5	30.0	29.8	0.2	0.0	77.4	48.9	126.3	126.3	0.0	0.0
Swaziland	1.3	3.9	5.2	2.5	8.3	5.6	3.5	5.7	9.2	3.2	6.0	0.0
Togo	6.7	9.1	15.8	9.8	6.3	0.2	32.2	20.4	52.6	42.6	10.0	0.0
Uganda	5.1	38.3	43.4	42.7	0.8	0.1	34.1	135.6	169.7	168.7	1.0	0.0
United Republic of Tanzania	9.5	33.2	42.7	45.5	0.6	3.4	65.5	105.2	170.7	170.7	0.0	0.0
Zambia	12.4	22.6	35.0	34.5	0.2	-0.4	51.7	62.5	114.2	114.2	0.0	0.0
Zimbabwe	9.5	18.8	28.3	33.7	0.4	5.8	36.2	35.3	71.5	76.5	0.0	5.0
High income countries	**15 516.4**	**3 438.1**	**18 954.5**	**20 607.7**	**1 560.2**	**3 114.3**	**27 547.4**	**3 821.2**	**31 368.6**	**33 258.6**	**2 259.0**	**4 035.0**
Australia	539.3	77.4	616.7	638.9	0.5	23.0	865.8	75.6	941.4	971.4	0.0	30.0
Canada	936.2	160.8	1 097.0	1 049.2	183.0	131.3	1 309.6	169.6	1 479.2	1 379.2	100.0	0.0
Iceland	3.0	0.4	3.4	3.2	0.2	0.0	5.6	0.7	6.3	6.3	0.0	0.0

COUNTRY	POULTRY MEAT 2000						POULTRY MEAT 2030					
	Consumption			Production	Import	Export	Consumption			Production	Import	Export
	Urban	Rural	Total				Urban	Rural	Total			
Israel	260.0	25.1	285.1	289.5	7.4	11.3	540.9	42.2	583.1	588.1	0.0	5.0
Japan	1 276.3	663.1	1 939.4	1 194.8	783.1	3.7	2 045.6	737.8	2 783.4	1 433.4	1 400.0	0.0
New Zealand	92.9	14.3	107.2	107.8	0.5	1.3	135.2	16.3	151.5	151.5	0.0	0.0
Norway	25.9	6.3	32.2	31.9	0.4	0.1	66.2	12.4	78.6	78.6	0.0	0.0
Republic of Korea	402.6	99.6	502.2	426.5	77.6	1.9	1 037.7	163.3	1 201.0	1 101.0	100.0	0.0
Saudi Arabia	582.4	126.0	708.4	380.2	344.0	15.7	1 635.7	226.2	1 861.9	1 261.9	600.0	0.0
Switzerland	71.7	21.1	92.8	36.0	57.3	0.4	96.9	22.9	119.8	64.8	55.0	0.0
Trinidad and Tobago	6.5	27.8	34.3	31.2	3.4	0.3	15.2	34.5	49.7	45.7	4.0	0.0
United States of America	11 319.7	2 216.1	13 535.8	16 418.5	102.8	2 925.3	19 793.1	2 319.6	22 112.7	26 176.7	0.0	4 000.0

Table C 10. Change in consumption and production of poultry meat between 2000 and 2030 (absolute change is in thousands of metric tonnes, proportional change in percentage).

COUNTRY	POULTRY MEAT, CHANGE BETWEEN 2000 AND 2030													
	Consumption								Production		Import		Export	
	Absolute change			Percent change			Proportion of change due to change in consump. rates %	Proportion of change due to change in population %	Absolute change	Percent change	Absolute change	Percent change	Absolute change	Percent change
	Urban	Rural	Total	Urban	Rural	Total								
East Asia and Pacific	**17 302.1**	**5 219.7**	**22 521.8**	**223.9**	**65.4**	**143.4**			**22 423.0**	**141.9**	**-197.4**	**-22.2**	**-330.8**	**-35.5**
Cambodia	27.4	33.0	60.4	556.8	161.9	238.7	37.3	33.2	60.6	241.4	-0.1	-100.0	0.0	
China	11 551.8	3 057.5	14 609.3	189.1	51.4	121.2	77.8	11.4	14 396.4	122.3	-288.0	-36.5	-499.7	-100.0
Dem. People's Rep. of Korea	42.6	10.3	52.9	244.8	107.6	195.9	83.6	6.2	52.9	195.9	0.0		0.0	
Indonesia	2 165.9	685.7	2 851.6	673.2	156.6	375.5	69.9	8.3	2 710.1	360.9	138.6	1 215.8	-2.9	-100.0
Lao People's Dem. Rep.	28.5	19.0	47.5	1 049.3	198.5	386.2	45.7	19.6	47.6	390.2	-0.1	-100.0	0.0	
Malaysia	928.8	4.1	932.9	178.4	1.3	112.9	34.6	47.0	954.2	114.2	-61.8	-100.0	-50.4	-100.0
Myanmar	312.5	254.4	566.9	553.5	179.1	285.6	69.7	10.1	567.1	286.0	-0.2	-100.0	0.0	
Philippines	1 196.1	234.8	1 430.9	351.0	96.8	245.3	52.9	20.5	1 413.8	252.6	16.9	70.7	-0.2	-100.0
Thailand	637.4	481.3	1 118.7	235.3	81.1	129.4	65.9	18.4	1 368.6	108.4	-1.6	-100.0	222.4	58.9
Viet Nam	411.2	439.5	850.7	485.4	164.2	241.4	60.6	16.0	851.7	242.4	-1.1	-100.0	0.0	
Eastern Europe and Central Asia	**1 915.0**	**394.7**	**2 309.7**	**125.3**	**63.7**	**107.5**			**2 266.1**	**158.7**	**19.3**	**2.5**	**26.7**	**267.0**
Russian Federation	716.9	160.7	877.6	64.3	40.0	57.9	159.0	-30.7	797.9	100.2	25.5	3.3	-3.2	-100.0
Turkey	1 198.1	234.0	1 432.1	289.9	107.4	226.9	62.9	15.3	1 468.2	232.4	-6.2	-100.0	29.9	439.7

COUNTRY	POULTRY MEAT, CHANGE BETWEEN 2000 AND 2030													
	Consumption								Production		Import		Export	
	Absolute change			Percent change			Proportion of change due to change in consump. rates %	Proportion of change due to change in population %	Absolute change	Percent change	Absolute change	Percent change	Absolute change	Percent change
	Urban	Rural	Total	Urban	Rural	Total								
Latin America/ Caribbean	**13 062.6**	**1 371.0**	**14 433.6**	**147.7**	**52.3**	**125.9**			**15 736.7**	**128.6**	**483.5**	**73.8**	**1 940.1**	**169.9**
Argentina	737.8	-3.2	734.6	79.0	-3.9	72.3	43.5	43.0	747.8	75.4	-43.7	-81.4	-30.4	-100.0
Bolivia	237.2	48.5	285.7	261.8	100.0	205.4	44.5	29.0	285.9	205.8	-0.7	-100.0	-0.5	-100.0
Brazil	3 878.4	-17.2	3 861.2	97.7	-1.6	76.9	47.9	38.1	5 827.1	96.2	-4.3	-100.0	1 961.6	188.9
Chile	311.2	4.8	316.0	103.1	9.2	89.2	46.9	37.5	358.1	93.8	-0.7	-100.0	41.5	122.1
Colombia	1 114.4	202.8	1 317.2	282.2	137.3	242.8	56.6	18.3	1 244.2	241.4	66.3	196.7	-7.7	-100.0
Costa Rica	96.6	19.5	116.1	224.6	67.7	161.7	46.4	30.6	120.3	163.5	-1.4	-100.0	2.5	71.4
Cuba	70.4	48.1	118.5	119.3	97.5	109.4	97.7	1.1	95.2	159.2	23.4	48.3	0.0	
Dominican Republic	228.4	12.5	240.9	180.5	16.5	118.9	52.1	29.6	244.7	123.1	-3.8	-100.0	0.0	
Ecuador	298.9	61.1	360.0	312.7	94.9	225.0	59.0	17.6	358.8	222.6	-3.2	-100.0	-4.4	-100.0
El Salvador	76.9	26.7	103.6	287.2	138.8	225.2	57.4	18.6	102.3	214.5	-3.3	-100.0	-4.6	-92.0
Guatemala	300.5	154.6	455.1	429.7	183.9	295.5	39.0	28.4	427.8	325.8	24.2	93.8	-3.0	-100.0
Guyana	6.3	5.7	12.0	99.2	44.2	62.2	124.0	-13.6	14.6	120.7	-2.6	-36.1	0.0	
Haiti	42.0	5.6	47.6	366.3	30.3	158.1	54.6	24.4	29.6	365.4	17.9	81.0	0.0	
Honduras	126.4	58.9	185.3	336.0	131.0	224.3	42.5	29.4	185.0	253.8	0.3	3.1	-0.1	-100.0
Jamaica	68.8	22.7	91.5	118.9	42.5	82.2	47.5	37.7	99.2	126.2	-8.0	-24.2	-0.2	-100.0
Mexico	3 345.5	451.6	3 797.1	201.7	81.3	171.5	58.9	20.4	3 355.7	180.8	431.9	117.3	-9.6	-100.0

COUNTRY	POULTRY MEAT, CHANGE BETWEEN 2000 AND 2030													
	Consumption								Production		Import		Export	
	Absolute change			Percent change			Proportion of change due to change in consump. rates %	Proportion of change due to change in population %	Absolute change	Percent change	Absolute change	Percent change	Absolute change	Percent change
	Urban	Rural	Total	Urban	Rural	Total								
Nicaragua	103.3	45.0	148.3	388.0	209.6	308.3	42.8	24.7	147.4	335.0	0.2	4.2	-0.7	-100.0
Panama	108.2	8.1	116.3	223.1	32.8	158.7	43.5	33.4	110.7	145.8	0.8	19.0	-0.4	-100.0
Paraguay	105.2	32.0	137.2	369.7	137.0	264.9	38.4	30.5	135.4	284.5	1.7	39.5	0.0	
Peru	754.5	152.2	906.7	305.8	207.9	283.4	59.2	15.3	768.6	129.3	-11.5	-100.0	-1.8	-100.0
Suriname	6.8	0.0	6.8	61.4	1.1	53.1	62.3	28.3	4.3	100.0	3.1	39.2	0.0	
Uruguay	43.3	1.0	44.3	89.8	25.2	84.7	66.1	21.8	41.9	76.6	-0.9	-100.0	-0.5	-100.0
Venezuela	1 001.8	29.8	1 031.6	182.0	36.1	163.0	44.5	32.1	1 032.1	163.2	-2.2	-100.0	-1.6	-100.0
Middle East/ North Africa	**4 457.9**	**1 837.7**	**6 295.6**	**294.5**	**170.2**	**242.7**			**5 879.0**	**232.0**	**396.7**	**408.1**	**-11.3**	**-100.0**
Algeria	395.0	51.7	446.7	246.2	75.9	195.4	52.5	23.5	423.5	187.0	23.2	1 104.8	0.0	
Egypt	821.9	753.2	1 575.1	320.2	215.0	259.4	47.5	23.5	1 572.6	262.3	1.5	17.6	-1.1	-100.0
Iran (Islamic Republic of)	1 359.9	238.0	1 597.9	253.5	81.3	192.7	55.0	21.9	1 593.5	193.5	-3.6	-26.5	-8.0	-100.0
Iraq	433.4	169.4	602.8	1 283.2	1 127.5	1 235.2	47.3	7.7	453.5	975.3	149.4	6 790.9	0.0	
Jordan	157.4	29.3	186.7	171.1	114.8	158.9	32.0	45.1	189.9	166.1	-3.5	-100.0	-0.3	-100.0
Lebanon	87.0	5.7	92.7	131.8	56.0	121.7	52.8	28.7	66.4	67.1	0.4	8.7	-0.4	-100.0
Libyan Arab Jamahiriya	140.3	20.8	161.1	184.7	90.7	162.9	42.7	33.8	174.7	180.3	3.0	150.0	0.0	
Morocco	332.7	122.8	455.5	242.4	102.4	177.1	50.7	26.0	448.8	184.0	6.7	50.4	0.0	
Syrian Arab Republic	336.4	167.2	503.6	572.7	306.4	444.5	48.1	16.6	494.1	438.0	9.4	1 566.7	-0.1	-100.0

COUNTRY	POULTRY MEAT, CHANGE BETWEEN 2000 AND 2030													
	Consumption								Production		Import		Export	
	Absolute change			Percent change			Proportion of change due to change in consump. rates %	Proportion of change due to change in population %	Absolute change	Percent change	Absolute change	Percent change	Absolute change	Percent change
	Urban	Rural	Total	Urban	Rural	Total								
Tunisia	146.4	32.4	178.8	221.4	84.6	171.3	63.7	17.4	179.9	174.2	-2.4	-100.0	-1.4	-100.0
Yemen	247.6	247.1	494.7	821.0	300.8	440.5	21.0	41.0	282.1	415.5	212.6	478.8	0.0	
South Asia	**4 990.6**	**6 500.6**	**11 491.2**	**1 123.5**	**569.4**	**724.6**			**11 467.1**	**724.9**	**21.3**	**317.9**	**-2.7**	**-100.0**
Afghanistan	53.2	75.9	129.1	1 575.3	780.6	985.5	37.1	13.5	119.1	909.2	10.0		0.0	
Bangladesh	286.8	370.8	657.6	1 063.9	428.5	579.4	56.2	10.3	660.5	597.2	-3.0	-100.0	0.0	
India	3 737.1	5 128.3	8 865.4	1 277.1	676.6	843.8	68.4	4.7	8 864.0	842.6	0.0		-1.4	-100.0
Nepal	23.3	45.2	68.5	1 329.0	402.1	526.9	49.7	13.9	59.0	472.0	9.4	1 566.7	0.0	
Pakistan	848.5	752.7	1 601.2	786.4	344.2	490.3	42.8	18.4	1 601.0	489.9	-0.9	-100.0	-1.2	-100.0
Sri Lanka	41.7	127.7	169.4	359.8	222.4	245.5	80.0	6.7	163.5	244.4	5.8	263.6	-0.1	-100.0
Sub-Saharan Africa	**2 044.1**	**1 191.0**	**3 235.1**	**238.9**	**113.3**	**169.6**			**2 930.1**	**176.9**	**278.7**	**98.3**	**-27.5**	**-79.7**
Angola	103.8	23.3	127.1	426.7	116.2	286.3	23.6	45.6	29.0	386.7	98.1	265.9	0.0	
Benin	42.2	20.0	62.2	186.8	55.4	106.0	5.7	88.9	24.3	209.5	34.7	69.0	-3.2	-100.0
Botswana	8.2	0.6	8.8	148.1	16.5	96.7	121.1	-9.7	9.5	279.4	-0.6	-10.7	0.0	
Burkina Faso	28.8	41.3	70.1	544.8	195.7	265.5	21.1	50.6	68.7	247.1	-0.2	-100.0	-1.5	-100.0
Burundi	4.3	14.3	18.6	826.0	260.5	310.0	28.6	37.8	18.7	316.9	-0.1	-100.0	0.0	
Cameroon	43.6	7.5	51.1	229.0	44.5	142.3	48.0	30.9	51.4	200.8	-0.3	-2.9	0.0	
Central African Republic	2.1	1.5	3.6	173.6	82.8	120.0	41.0	39.6	3.6	120.0	0.0		0.0	
Chad	4.9	4.6	9.5	387.0	133.4	202.1	16.8	62.0	9.5	202.1	0.0		0.0	

COUNTRY	POULTRY MEAT, CHANGE BETWEEN 2000 AND 2030													
	Consumption								Production		Import		Export	
	Absolute change			Percent change			Proportion of change due to change in consump. rates %	Proportion of change due to change in population %	Absolute change	Percent change	Absolute change	Percent change	Absolute change	Percent change
	Urban	Rural	Total	Urban	Rural	Total								
Congo	21.8	6.8	28.6	250.2	105.2	188.2	16.7	63.4	19.4	440.9	9.2	85.2	0.0	
Cote d'Ivoire	75.8	27.3	103.1	266.2	71.4	154.6	47.4	30.4	102.5	161.9	0.5	14.3	-0.1	-100.0
Dem. Rep. of the Congo	99.2	91.6	190.8	1 358.7	576.2	822.4	38.8	14.6	102.6	900.0	88.1	740.3	0.0	
Eritrea	2.4	3.6	6.0	689.0	232.6	315.8	29.9	36.0	5.9	347.1	0.1	50.0	0.0	
Ethiopia	47.8	101.7	149.5	704.8	292.1	359.4	38.1	26.1	149.6	360.5	-0.2	-100.0	0.0	
Gabon	22.9	0.5	23.4	148.6	24.9	133.7	32.7	46.8	7.1	197.2	16.3	117.3	0.0	
Gambia	4.0	0.8	4.8	320.4	81.5	218.2	36.0	35.8	2.1	233.3	2.7	207.7	0.0	
Ghana	70.7	25.0	95.7	427.5	136.0	274.2	45.4	24.3	76.9	411.2	18.8	116.0	0.0	
Guinea	6.9	4.6	11.5	385.9	153.6	239.6	35.3	35.0	9.2	224.4	2.3	328.6	0.0	
Kenya	43.2	66.6	109.8	383.0	153.1	200.4	61.4	17.3	109.7	192.8	-0.1	-100.0	-0.2	-9.1
Lesotho	2.5	0.3	2.8	199.4	7.3	48.3	145.0	-26.5	2.8	155.6	0.0	0.0	0.0	
Liberia	24.6	6.8	31.4	467.4	156.7	327.1	25.6	40.5	34.1	494.2	-2.7	-100.0	0.0	
Madagascar	76.0	80.8	156.8	423.9	188.9	258.3	27.5	42.4	157.0	259.5	-0.2	-100.0	0.0	
Malawi	9.1	11.2	20.3	392.0	85.5	131.8	24.9	56.6	19.9	134.5	0.5	100.0	0.2	-100.0
Mali	42.1	35.4	77.5	504.6	174.6	271.0	18.2	54.7	77.5	271.0	-0.1	-100.0	-0.1	-100.0
Mauritania	6.3	3.6	9.9	210.1	103.1	152.3	14.3	70.4	9.3	226.8	0.7	30.4	0.0	
Mauritius	21.6	8.9	30.5	160.4	104.5	138.6	69.5	15.5	31.0	144.2	-0.8	-100.0	-0.3	-100.0
Mozambique	56.9	32.3	89.2	465.7	122.3	231.1	52.9	21.2	89.2	260.8	0.0	0.0	0.0	

COUNTRY	POULTRY MEAT, CHANGE BETWEEN 2000 AND 2030													
	Consumption								Production		Import		Export	
	Absolute change			Percent change			Proportion of change due to change in consump. rates %	Proportion of change due to change in population %	Absolute change	Percent change	Absolute change	Percent change	Absolute change	Percent change
	Urban	Rural	Total	Urban	Rural	Total								
Niger	17.0	47.4	64.4	392.4	212.8	242.1	8.8	75.3	64.5	243.4	-0.1	-100.0	0.0	
Nigeria	360.3	145.6	505.9	465.6	145.5	285.0	39.9	28.1	471.6	264.3	34.3	-3 811.1	0.0	
Rwanda	1.4	2.4	3.8	528.0	178.1	237.5	38.9	31.8	3.8	237.5	0.0		0.0	
Senegal	95.9	66.5	162.4	345.2	173.5	245.7	37.4	32.6	162.6	254.5	-0.3	-13.0	-0.1	-100.0
Sierra Leone	8.5	5.6	14.1	213.1	86.0	134.3	19.7	63.6	14.0	145.8	0.1	11.1	0.0	
Somalia	19.9	18.0	37.9	1 672.9	814.8	1 114.7	30.0	16.1	32.9	967.6	5.0		0.0	
South Africa	424.8	15.4	440.2	95.8	4.5	56.2	111.9	-7.3	456.5	64.6	-27.2	-31.2	-12.5	-100.0
Sudan	65.9	30.4	96.3	573.4	164.1	321.0	50.5	18.9	96.5	323.8	-0.2	-100.0	0.0	
Swaziland	2.2	1.8	4.0	169.1	46.4	76.9	105.2	-2.9	0.7	28.0	-2.3	-27.7	-5.6	-100.0
Togo	25.5	11.3	36.8	381.9	123.7	232.9	37.3	33.5	32.8	334.7	3.7	58.7	-0.2	-100.0
Uganda	29.0	97.3	126.3	564.0	254.3	291.0	15.0	59.2	126.0	295.1	0.2	25.0	-0.1	-100.0
United Republic of Tanzania	56.0	72.0	128.0	592.4	216.6	299.8	48.3	21.1	125.2	275.2	-0.6	-100.0	-3.4	-100.0
Zambia	39.3	39.9	79.2	316.4	176.8	226.3	54.4	20.4	79.7	231.0	-0.2	-100.0	0.4	-100.0
Zimbabwe	26.7	16.5	43.2	280.5	87.9	152.7	98.3	0.7	42.8	127.0	-0.4	-100.0	-0.8	-13.8
High income countries	**12 031.0**	**383.1**	**12 414.1**	**77.5**	**11.1**	**65.5**			**12 650.9**	**61.4**	**698.8**	**44.8**	**920.7**	**29.6**
Australia	326.4	-1.7	324.7	60.5	-2.3	52.7	43.0	46.4	332.5	52.0	-0.5	-100.0	7.0	30.4
Canada	373.4	8.8	382.2	39.9	5.5	34.8	35.0	58.0	330.0	31.5	-83.0	-45.4	-131.3	-100.0

COUNTRY	POULTRY MEAT, CHANGE BETWEEN 2000 AND 2030													
	Consumption								Production		Import		Export	
	Absolute change			Percent change			Proportion of change due to change in consump. rates %	Proportion of change due to change in population %	Absolute change	Percent change	Absolute change	Percent change	Absolute change	Percent change
	Urban	Rural	Total	Urban	Rural	Total								
Iceland	2.6	0.3	2.9	86.4	77.4	85.3	68.4	20.0	3.1	96.9	-0.2	-100.0	0.0	
Israel	281.0	17.0	298.0	108.1	67.8	104.5	36.1	46.4	298.6	103.1	-7.4	-100.0	-6.3	-55.8
Japan	769.3	74.7	844.0	60.3	11.3	43.5	116.4	-10.9	238.6	20.0	616.9	78.8	-3.7	-100.0
New Zealand	42.3	2.0	44.3	45.6	13.7	41.3	48.3	43.1	43.7	40.5	-0.5	-100.0	-1.3	-100.0
Norway	40.3	6.1	46.4	155.4	97.5	144.1	84.8	6.8	46.7	146.4	-0.4	-100.0	-0.1	-100.0
Republic of Korea	635.1	63.7	698.8	157.7	64.0	139.1	89.0	4.9	674.5	158.1	22.4	28.9	-1.9	-100.0
Saudi Arabia	1 053.3	100.2	1 153.5	180.9	79.5	162.8	21.4	58.4	881.7	231.9	256.0	74.4	-15.7	-100.0
Switzerland	25.2	1.8	27.0	35.2	8.5	29.1	134.5	-24.8	28.8	80.0	-2.3	-4.0	-0.4	-100.0
Trinidad and Tobago	8.7	6.7	15.4	135.3	23.9	44.9	90.8	6.6	14.5	46.5	0.6	17.6	-0.3	-100.0
United States of America	8 473.4	103.5	8 576.9	74.9	4.7	63.4	40.6	47.3	9 758.2	59.4	-102.8	-100.0	1 074.7	36.7

Table C 11. Consumption and production of eggs in 2000 and 2030 (all measures are in thousands of metric tonnes).

COUNTRY	EGGS 2000						EGGS 2030					
	Consumption			Production	Import	Export	Consumption			Production	Import	Export
	Urban	Rural	Total				Urban	Rural	Total			
East Asia and Pacific	**11 313.3**	**11 309.3**	**22 622.6**	**25 246.1**	**11.0**	**130.8**	**21 634.2**	**11 176.3**	**32 810.5**	**36 250.7**	**0.0**	**135.0**
Cambodia	2.6	10.8	13.4	14.9	0.0	0.0	17.8	29.3	47.1	52.5	0.0	0.0
China	10 281.7	10 004.8	20 286.5	22 382.5	0.3	60.1	17 953.0	9 143.0	27 096.0	29 418.0	0.0	100.0
Dem. People's Rep. of Korea	64.3	36.8	101.1	108.3	0.1	0.0	142.9	49.4	192.3	206.3	0.0	0.0
Indonesia	259.3	352.9	612.2	739.5	2.5	2.6	1 407.9	634.4	2 042.3	2 465.6	0.0	0.0
Lao People's Dem. Rep.	1.9	6.5	8.4	9.9	0.0	0.0	14.5	13.3	27.8	32.7	0.0	0.0
Malaysia	176.9	104.0	280.9	407.2	1.7	59.4	463.9	99.1	563.0	713.2	0.0	30.0
Myanmar	21.1	53.1	74.2	87.8	0.4	0.0	103.5	111.1	214.6	255.2	0.0	0.0
Philippines	274.6	195.0	469.6	514.9	2.5	0.2	868.4	269.6	1 138.0	1 253.8	0.0	0.0
Thailand	189.6	415.6	605.2	795.1	1.8	6.6	483.6	572.3	1 055.9	1 382.9	0.0	5.0
Viet Nam	41.2	129.9	171.1	186.0	1.7	1.9	178.7	254.8	433.5	470.5	0.0	0.0
Eastern Europe and Central Asia	**1 736.9**	**685.7**	**2 422.6**	**2 547.8**	**27.5**	**23.1**	**2 391.0**	**715.1**	**3 106.1**	**3 320.9**	**20.0**	**20.0**
Russian Federation	1 375.3	495.2	1 870.5	1 911.6	25.6	8.2	1 601.1	493.9	2 095.0	2 160.1	20.0	0.0
Turkey	361.6	190.5	552.1	636.2	1.9	14.9	789.8	221.3	1 011.1	1 160.8	0.0	20.0
Latin America/Caribbean	**3 133.0**	**1 010.5**	**4 143.5**	**5 028.7**	**44.9**	**29.6**	**6 171.1**	**1 217.9**	**7 389.0**	**8 864.8**	**24.0**	**12.0**
Argentina	250.2	21.8	272.0	315.9	4.0	0.5	381.9	17.9	399.8	470.0	0.0	0.0
Bolivia	19.8	10.5	30.3	38.9	0.0	0.5	53.6	15.6	69.2	86.5	0.0	0.0
Brazil	956.8	253.6	1 210.4	1 561.5	0.5	7.0	1 766.2	232.5	1 998.7	2 571.1	0.0	5.0
Chile	70.2	12.2	82.4	109.9	0.1	1.5	130.1	12.1	142.2	184.2	0.0	0.0

COUNTRY	EGGS 2000						EGGS 2030					
	Consumption			Production	Import	Export	Consumption			Production	Import	Export
	Urban	Rural	Total				Urban	Rural	Total			
Colombia	210.7	79.2	289.9	338.5	2.0	2.5	493.5	114.9	608.4	709.3	0.0	0.0
Costa Rica	22.1	14.8	36.9	42.4	1.0	0.7	57.2	19.7	76.9	89.1	0.0	0.0
Cuba	32.3	27.0	59.3	67.6	0.0	0.0	58.2	43.8	102.0	116.2	0.0	0.0
Dominican Republic	28.6	17.2	45.8	59.8	0.7	0.0	86.8	21.7	108.5	143.8	0.0	0.0
Ecuador	24.5	16.5	41.0	61.5	0.8	5.3	59.7	19.0	78.7	106.1	0.0	0.0
El Salvador	24.5	17.5	42.0	52.8	1.3	8.3	73.2	32.4	105.6	123.2	0.0	7.0
Guatemala	33.8	40.7	74.5	81.3	1.5	0.6	114.9	74.1	189.0	208.7	0.0	0.0
Guyana	0.3	0.7	1.0	1.4	0.5	0.0	0.9	1.2	2.1	4.3	0.5	0.0
Haiti	1.4	2.4	3.8	4.6	0.0	0.0	9.1	4.2	13.3	16.3	0.0	0.0
Honduras	19.5	23.3	42.8	41.8	7.5	0.0	67.7	42.9	110.6	122.2	7.0	0.0
Jamaica	2.8	2.5	5.3	7.0	3.0	0.0	6.1	3.7	9.8	19.7	3.0	0.0
Mexico	1 139.4	384.7	1 524.1	1 771.6	11.0	0.8	2 110.7	427.5	2 538.2	2 859.1	10.0	0.0
Nicaragua	11.1	9.0	20.1	20.8	2.0	0.0	37.2	19.1	56.3	62.1	2.0	0.0
Panama	4.9	2.5	7.4	12.6	0.3	0.9	22.4	4.7	27.1	42.3	0.0	0.0
Paraguay	30.8	25.5	56.3	61.7	0.2	0.0	88.6	36.8	125.4	137.8	0.0	0.0
Peru	92.8	27.4	120.2	162.1	1.1	0.8	227.6	51.2	278.8	354.4	1.2	0.0
Suriname	2.2	0.3	2.5	2.8	0.1	0.0	4.5	0.5	5.0	5.4	0.3	0.0
Uruguay	28.7	2.5	31.2	37.2	0.4	0.2	44.9	2.6	47.5	57.0	0.0	0.0
Venezuela	125.5	18.8	144.3	175.0	6.9	0.0	276.0	19.9	295.9	376.0	0.0	0.0
Middle East/North Africa	**727.2**	**491.6**	**1 218.8**	**1 483.8**	**26.7**	**29.8**	**2 112.2**	**905.7**	**3 017.9**	**3 604.7**	**44.0**	**3.0**
Algeria	61.5	26.0	87.5	104.0	3.2	0.0	216.4	46.6	263.0	318.3	5.0	0.0

COUNTRY	EGGS 2000						EGGS 2030					
	Consumption			Production	Import	Export	Consumption			Production	Import	Export
	Urban	Rural	Total				Urban	Rural	Total			
Egypt	61.4	83.8	145.2	176.5	0.6	0.1	213.3	218.0	431.3	526.1	0.0	0.0
Iran (Islamic Republic of)	295.1	160.7	455.8	576.6	0.3	24.6	812.1	226.8	1 038.9	1 247.3	0.0	0.0
Iraq	11.1	4.9	16.0	12.5	7.7	0.0	74.1	29.2	103.3	122.7	20.0	0.0
Jordan	27.8	7.7	35.5	49.4	0.1	1.8	71.2	15.7	86.9	119.6	0.0	3.0
Lebanon	16.3	2.5	18.8	36.3	0.0	0.8	30.2	3.1	33.3	42.6	0.0	0.0
Libyan Arab Jamahiriya	39.9	12.1	52.0	58.4	3.2	0.0	92.6	18.7	111.3	129.6	3.0	0.0
Morocco	107.6	93.9	201.5	238.3	0.9	0.0	293.5	151.5	445.0	527.3	1.0	0.0
Syrian Arab Republic	54.9	51.0	105.9	122.1	0.0	1.2	147.4	82.6	230.0	262.2	0.0	0.0
Tunisia	42.7	24.6	67.3	78.3	1.1	0.1	91.2	30.3	121.5	135.9	0.0	0.0
Yemen	9.0	24.3	33.3	31.4	9.6	1.2	70.3	83.1	153.4	173.1	15.0	0.0
South Asia	**565.4**	**1 455.2**	**2 020.6**	**2 399.7**	**5.0**	**24.3**	**3 332.8**	**4 634.3**	**7 967.1**	**9 089.1**	**0.0**	**20.0**
Afghanistan	3.9	11.2	15.1	18.3	0.0	0.0	31.3	47.2	78.5	91.8	0.0	0.0
Bangladesh	32.2	102.7	134.9	158.7	4.6	0.0	262.0	380.1	642.1	753.2	0.0	0.0
India	423.7	1 092.7	1 516.4	1 807.1	0.0	23.4	2 347.3	3 420.3	5 767.6	6 558.4	0.0	20.0
Nepal	3.1	19.6	22.7	24.4	0.3	0.0	20.5	46.3	66.8	72.9	0.0	0.0
Pakistan	95.1	191.5	286.6	338.8	0.1	0.5	647.5	656.2	1 303.7	1 487.3	0.0	0.0
Sri Lanka	7.6	37.3	44.9	52.4	0.0	0.4	24.3	84.1	108.4	125.5	0.0	0.0
Sub-Saharan Africa	**466.2**	**650.7**	**1 116.9**	**1 328.7**	**22.5**	**7.2**	**1 630.0**	**1 214.1**	**2 844.1**	**3 337.3**	**35.3**	**5.0**
Angola	5.4	4.5	9.9	4.3	7.5	0.0	25.7	8.6	34.3	20.5	20.0	0.0
Benin	2.1	3.3	5.4	7.2	0.0	0.0	8.4	7.3	15.7	20.2	0.0	0.0
Botswana	2.2	1.4	3.6	3.0	1.2	0.0	5.8	1.7	7.5	8.9	0.0	0.0

COUNTRY	EGGS 2000						EGGS 2030					
	Consumption			Production	Import	Export	Consumption			Production	Import	Export
	Urban	Rural	Total				Urban	Rural	Total			
Burkina Faso	2.3	9.1	11.4	17.5	0.0	0.0	14.8	27.1	41.9	58.6	0.3	0.0
Burundi	0.2	2.2	2.4	3.1	0.0	0.0	2.2	8.7	10.9	13.5	0.0	0.0
Cameroon	5.6	4.9	10.5	13.6	0.0	0.0	15.7	6.1	21.8	27.1	0.0	0.0
Central African Republic	0.5	0.7	1.2	1.4	0.0	0.0	1.4	1.3	2.7	3.2	0.0	0.0
Chad	1.0	2.6	3.6	4.4	0.0	0.0	3.9	5.0	8.9	10.7	0.0	0.0
Congo	1.0	0.8	1.8	1.2	1.2	0.0	3.7	1.6	5.3	4.4	2.5	0.0
Cote d'Ivoire	11.5	15.4	26.9	32.1	0.2	0.0	50.0	31.4	81.4	97.7	0.0	0.0
Dem. Rep. of the Congo	1.7	3.5	5.2	7.0	0.4	0.0	21.3	21.5	42.8	57.8	0.2	0.0
Eritrea	0.3	1.2	1.5	1.8	0.0	0.0	2.2	4.2	6.4	7.3	0.0	0.0
Ethiopia	4.5	23.1	27.6	31.7	0.0	0.0	32.8	81.7	114.5	131.6	0.0	0.0
Gabon	1.4	0.2	1.6	2.0	0.0	0.0	3.8	0.3	4.1	5.2	0.0	0.0
Gambia	0.8	0.6	1.4	0.7	1.0	0.0	2.8	0.9	3.7	2.5	2.0	0.0
Ghana	7.6	8.5	16.1	21.3	0.1	0.0	43.6	21.7	65.3	87.2	0.0	0.0
Guinea	3.4	5.8	9.2	12.3	0.0	0.0	15.8	14.0	29.8	37.4	0.1	0.0
Kenya	9.5	36.4	45.9	59.6	0.0	0.0	32.1	64.8	96.9	118.4	0.4	0.0
Lesotho	0.3	1.0	1.3	1.5	0.1	0.0	1.1	1.5	2.6	3.2	0.0	0.0
Liberia	2.6	2.1	4.7	4.3	1.6	0.0	10.0	3.7	13.7	15.3	2.0	0.0
Madagascar	4.3	10.2	14.5	19.0	0.1	0.0	17.4	22.8	40.2	52.6	0.0	0.0
Malawi	2.6	14.6	17.2	19.4	1.0	0.0	12.8	26.9	39.7	44.5	1.0	0.0
Mali	2.0	4.9	6.9	11.9	0.0	0.0	12.7	13.9	26.6	40.5	0.2	0.0
Mauritania	2.0	2.4	4.4	4.9	0.6	0.0	6.2	4.8	11.0	13.4	0.0	0.0

COUNTRY	EGGS 2000						EGGS 2030					
	Consumption			Production	Import	Export	Consumption			Production	Import	Export
	Urban	Rural	Total				Urban	Rural	Total			
Mauritius	2.3	1.4	3.7	5.2	0.0	0.0	4.3	2.2	6.5	9.2	0.0	0.0
Mozambique	3.5	7.6	11.1	14.0	1.2	0.0	17.3	14.6	31.9	41.6	1.0	0.0
Niger	1.1	5.6	6.7	10.2	0.1	0.0	3.6	11.6	15.2	21.3	0.1	0.0
Nigeria	169.0	217.1	386.1	438.3	0.4	0.0	733.9	410.0	1 143.9	1 299.9	0.0	0.0
Rwanda	0.3	1.6	1.9	2.2	0.0	0.0	2.1	4.6	6.7	7.6	0.0	0.0
Senegal	10.8	14.8	25.6	33.0	0.2	0.0	50.4	42.7	93.1	116.4	0.0	0.0
Sierra Leone	2.7	4.5	7.2	7.7	1.8	0.0	9.2	8.9	18.1	20.6	2.1	0.0
Somalia	0.7	1.2	1.9	2.5	0.0	0.0	6.5	6.2	12.7	15.7	0.0	0.0
South Africa	148.9	113.9	262.8	328.3	0.0	4.1	269.5	110.0	379.5	454.2	0.0	3.0
Sudan	14.6	23.4	38.0	44.8	0.1	0.0	63.5	39.7	103.2	117.8	0.0	0.0
Swaziland	0.6	2.0	2.6	0.9	2.4	0.3	2.0	3.2	5.2	5.0	2.1	0.0
Togo	2.0	2.7	4.7	6.3	0.1	0.0	9.4	6.0	15.4	19.8	0.1	0.0
Uganda	1.8	13.1	14.9	19.9	0.0	0.0	10.3	40.9	51.2	64.1	0.2	0.0
United Republic of Tanzania	12.8	44.8	57.6	62.4	1.1	0.1	32.9	52.5	85.4	92.8	1.0	0.0
Zambia	14.6	26.5	41.1	46.4	0.1	0.8	52.3	63.4	115.7	130.0	0.0	0.0
Zimbabwe	5.7	11.1	16.8	21.4	0.0	1.9	16.6	16.1	32.7	39.6	0.0	2.0
High income countries	**6 122.8**	**1 731.6**	**7 854.4**	**8 947.9**	**137.6**	**127.2**	**8 261.4**	**1 503.7**	**9 765.1**	**11 185.5**	**108.0**	**106.1**
Australia	119.3	17.1	136.4	165.5	1.2	1.2	156.3	13.6	169.9	206.1	0.0	0.0
Canada	298.0	51.1	349.1	372.3	37.6	15.4	345.8	44.8	390.6	423.3	20.0	0.0
Iceland	1.5	0.3	1.8	2.2	0.1	0.3	1.5	0.5	2.0	2.3	0.0	0.0

COUNTRY	EGGS 2000						EGGS 2030					
	Consumption			Production	Import	Export	Consumption			Production	Import	Export
	Urban	Rural	Total				Urban	Rural	Total			
Israel	59.7	5.7	65.4	88.1	0.3	4.0	83.3	6.4	89.7	121.2	0.0	5.0
Japan	1 620.8	840.8	2 461.6	2 543.1	39.5	0.2	2 010.1	724.9	2 735.0	2 829.4	40.0	0.0
New Zealand	31.8	4.9	36.7	45.4	0.4	0.8	35.6	4.3	39.9	48.8	0.0	0.0
Norway	35.7	9.0	44.7	49.4	0.8	2.3	40.5	8.6	49.1	53.8	0.0	1.1
Republic of Korea	364.2	89.8	454.0	509.2	2.7	0.1	778.7	122.0	900.7	1 012.6	3.0	0.0
Saudi Arabia	83.0	17.9	100.9	135.1	5.8	5.3	224.8	31.0	255.8	343.0	0.0	0.0
Switzerland	55.7	16.4	72.1	36.7	39.0	0.0	53.9	12.7	66.6	29.6	40.0	0.0
Trinidad and Tobago	0.7	3.2	3.9	3.3	2.7	0.0	1.7	4.0	5.7	2.4	5.0	0.0
United States of America	3 452.5	675.3	4 127.8	4 997.6	7.5	97.6	4 529.3	530.8	5 060.1	6 113.0	0.0	100.0

Table C 12. Change in consumption and production of eggs between 2000 and 2030 (absolute change is in thousands of metric tonnes, proportional change in percentage).

COUNTRY	EGGS, CHANGE BETWEEN 2000 AND 2030													
	Consumption								Production		Import		Export	
	Absolute change			Percent change			Proportion of change due to change in consump. rates %	Proportion of change due to change in population %	Absolute change	Percent change	Absolute change	Percent change	Absolute change	Percent change
	Urban	Rural	Total	Urban	Rural	Total								
East Asia and Pacific	**10 320.9**	**-133.0**	**10 187.9**	**91.2**	**-1.2**	**45.0**			**11 004.6**	**43.6**	**-11.0**	**-100.0**	**4.2**	**3.2**
Cambodia	15.2	18.5	33.7	580.3	171.6	251.5	86.5	71.2	37.6	252.3	0.0		0.0	
China	7 671.3	-861.8	6 809.5	74.6	-8.6	33.6	15.7	12.5	7 035.5	31.4	-0.3	-100.0	39.9	66.4
Dem. People's Rep. of Korea	78.6	12.6	91.2	122.3	34.1	90.2	65.0	11.4	98.0	90.5	-0.1	-100.0	0.0	
Indonesia	1 148.6	281.5	1 430.1	442.9	79.8	233.6	127.7	25.8	1 726.1	233.4	-2.5	-100.0	-2.6	-100.0
Lao People's Dem. Rep.	12.7	6.7	19.4	679.6	103.2	231.0	74.9	64.3	22.8	230.3	0.0		0.0	
Malaysia	286.9	-4.8	282.1	162.1	-4.6	100.4	21.4	36.6	306.0	75.1	-1.7	-100.0	-29.4	-49.5
Myanmar	82.4	58.0	140.4	389.7	109.4	189.2	105.0	24.5	167.4	190.7	-0.4	-100.0	0.0	
Philippines	593.8	74.6	668.4	216.3	38.2	142.3	55.8	45.9	738.9	143.5	-2.5	-100.0	-0.2	-100.0
Thailand	294.0	156.7	450.7	155.1	37.7	74.5	31.2	18.1	587.8	73.9	-1.8	-100.0	-1.6	-24.2
Viet Nam	137.5	124.9	262.4	333.6	96.2	153.4	76.1	35.6	284.5	153.0	-1.7	-100.0	-1.9	-100.0
Eastern Europe and Central Asia	**654.1**	**29.4**	**683.5**	**37.7**	**4.3**	**28.2**			**773.1**	**30.3**	**-7.5**	**-27.3**	**-3.1**	**-13.4**
Russian Federation	225.9	-1.4	224.5	16.4	-0.3	12.0	35.4	-17.4	248.5	13.0	-5.6	-21.9	-8.2	-100.0
Turkey	428.2	30.8	459.0	118.4	16.2	83.1	31.3	30.0	524.6	82.5	-1.9	-100.0	5.1	34.2

COUNTRY	EGGS, CHANGE BETWEEN 2000 AND 2030													
	Consumption								Production		Import		Export	
	Absolute change			Percent change			Proportion of change due to change in consump. rates %	Proportion of change due to change in population %	Absolute change	Percent change	Absolute change	Percent change	Absolute change	Percent change
	Urban	Rural	Total	Urban	Rural	Total								
Latin America/ Caribbean	**3 038.1**	**207.4**	**3 245.5**	**97.0**	**20.5**	**78.3**			**3 836.1**	**76.3**	**-20.9**	**-46.5**	**-17.6**	**-59.5**
Argentina	131.7	-3.9	127.8	52.7	-18.0	47.0	10.4	26.8	154.1	48.8	-4.0	-100.0	-0.5	-100.0
Bolivia	33.8	5.1	38.9	170.9	48.4	128.4	33.5	46.4	47.6	122.4	0.0		-0.5	-100.0
Brazil	809.4	-21.1	788.3	84.6	-8.3	65.1	21.5	22.7	1 009.6	64.7	-0.5	-100.0	-2.0	-28.6
Chile	59.9	-0.1	59.8	85.2	-0.5	72.6	22.0	25.1	74.3	67.6	-0.1	-100.0	-1.5	-100.0
Colombia	282.7	35.8	318.5	134.2	45.2	109.9	38.8	38.1	370.8	109.5	-2.0	-100.0	-2.5	-100.0
Costa Rica	35.1	4.9	40.0	158.5	33.5	108.4	34.3	43.1	46.7	110.1	-1.0	-100.0	-0.7	-100.0
Cuba	25.9	16.8	42.7	80.0	62.4	72.0	61.3	1.1	48.6	71.9	0.0		0.0	
Dominican Republic	58.2	4.5	62.7	203.5	26.1	136.9	57.6	26.9	84.0	140.5	-0.7	-100.0	0.0	
Ecuador	35.2	2.5	37.7	143.8	15.0	92.0	25.0	26.4	44.6	72.5	-0.8	-100.0	-5.3	-100.0
El Salvador	48.7	14.9	63.6	199.0	85.0	151.4	61.5	33.2	70.4	133.3	-1.3	-100.0	-1.3	-15.7
Guatemala	81.1	33.4	114.5	239.8	82.1	153.7	34.8	76.8	127.4	156.7	-1.5	-100.0	-0.6	-100.0
Guyana	0.5	0.6	1.1	153.8	87.7	110.0	92.4	-6.0	2.9	207.1	0.0	0.0	0.0	
Haiti	7.7	1.8	9.5	531.0	76.7	250.0	126.0	31.9	11.7	254.3	0.0		0.0	
Honduras	48.2	19.6	67.8	247.3	84.1	158.4	57.0	67.5	80.4	192.3	-0.5	-6.7	0.0	
Jamaica	3.4	1.1	4.5	122.0	44.6	84.9	31.1	23.5	12.7	181.4	0.0	0.0	0.0	
Mexico	971.3	42.8	1 014.1	85.2	11.1	66.5	20.1	30.1	1 087.5	61.4	-1.0	-9.1	-0.8	-100.0

COUNTRY	EGGS, CHANGE BETWEEN 2000 AND 2030													
	Consumption								Production		Import		Export	
	Absolute change			Percent change			Proportion of change due to change in consump. rates %	Proportion of change due to change in population %	Absolute change	Percent change	Absolute change	Percent change	Absolute change	Percent change
	Urban	Rural	Total	Urban	Rural	Total								
Nicaragua	26.1	10.1	36.2	234.8	112.3	180.1	57.1	73.5	41.3	198.6	0.0	0.0	0.0	
Panama	17.5	2.2	19.7	357.0	88.0	266.2	81.8	31.1	29.7	235.7	-0.3	-100.0	-0.9	-100.0
Paraguay	57.7	11.4	69.1	187.4	44.5	122.7	21.2	73.7	76.1	123.3	-0.2	-100.0	0.0	
Peru	134.9	23.7	158.6	145.4	86.4	131.9	45.9	32.1	192.3	118.6	0.1	9.1	-0.8	-100.0
Suriname	2.4	0.1	2.5	110.8	32.2	100.0	65.9	13.4	2.6	92.9	0.2	200.0	0.0	
Uruguay	16.2	0.1	16.3	56.4	4.7	52.2	23.9	15.5	19.8	53.2	-0.4	-100.0	-0.2	-100.0
Venezuela	150.4	1.2	151.6	119.8	6.2	105.1	28.5	43.2	201.0	114.9	-6.9	-100.0	0.0	
Middle East/ North Africa	**1 385.0**	**414.1**	**1 799.1**	**190.5**	**84.2**	**147.6**			**2 120.9**	**142.9**	**17.3**	**64.8**	**-26.8**	**-89.9**
Algeria	154.9	20.6	175.5	252.1	79.0	200.6	89.3	38.6	214.3	206.1	1.8	56.3	0.0	
Egypt	151.9	134.2	286.1	247.2	160.2	197.0	69.6	50.1	349.6	198.1	-0.6	-100.0	-0.1	-100.0
Iran (Islamic Republic of)	516.9	66.2	583.1	175.2	41.2	127.9	47.7	33.3	670.7	116.3	-0.3	-100.0	-24.6	-100.0
Iraq	63.0	24.3	87.3	568.6	493.8	545.6	295.4	121.8	110.2	881.6	12.3	159.7	0.0	
Jordan	43.4	8.0	51.4	156.4	103.0	144.8	30.6	51.5	70.2	142.1	-0.1	-100.0	1.2	66.7
Lebanon	13.9	0.6	14.5	85.2	24.6	77.1	16.2	18.1	6.3	17.4	0.0		-0.8	-100.0
Libyan Arab Jamahiriya	52.6	6.7	59.3	131.9	55.1	114.0	33.9	49.0	71.2	121.9	-0.2	-6.3	0.0	
Morocco	185.9	57.6	243.5	172.9	61.3	120.8	43.3	38.9	289.0	121.3	0.1	11.1	0.0	
Syrian Arab Republic	92.5	31.6	124.1	168.5	61.9	117.2	21.8	63.8	140.1	114.7	0.0		-1.2	-100.0

COUNTRY	EGGS, CHANGE BETWEEN 2000 AND 2030													
	Consumption								Production		Import		Export	
	Absolute change			Percent change			Proportion of change due to change in consump. rates %	Proportion of change due to change in population %	Absolute change	Percent change	Absolute change	Percent change	Absolute change	Percent change
	Urban	Rural	Total	Urban	Rural	Total								
Tunisia	48.6	5.6	54.2	113.8	22.9	80.5	33.6	25.6	57.6	73.6	-1.1	-100.0	-0.1	-100.0
Yemen	61.3	58.8	120.1	684.4	241.5	360.7	68.1	191.5	141.7	451.3	5.4	56.3	-1.2	-100.0
South Asia	**2 767.4**	**3 179.1**	**5 946.5**	**489.4**	**218.5**	**294.3**			**6 689.4**	**278.8**	**-5.0**	**-100.0**	**-4.3**	**-17.7**
Afghanistan	27.4	36.0	63.4	703.0	321.4	419.9	101.6	109.7	73.5	401.6	0.0		0.0	
Bangladesh	229.8	277.4	507.2	714.8	270.0	376.0	168.3	50.8	594.5	374.6	-4.6	-100.0	0.0	
India	1 923.6	2 327.6	4 251.2	454.0	213.0	280.3	145.2	33.0	4 751.3	262.9	0.0		-3.4	-14.5
Nepal	17.4	26.7	44.1	567.1	136.0	194.3	65.0	68.1	48.5	198.8	-0.3	-100.0	0.0	
Pakistan	552.4	464.7	1 017.1	581.0	242.6	354.9	117.5	76.5	1 148.5	339.0	-0.1	-100.0	-0.5	-100.0
Sri Lanka	16.7	46.8	63.5	221.2	125.3	141.4	91.8	14.2	73.1	139.5	0.0		-0.4	-100.0
Sub-Saharan Africa	**1 163.8**	**563.4**	**1 727.2**	**249.6**	**86.6**	**154.6**			**2 008.6**	**151.2**	**12.8**	**56.9**	**-2.2**	**-30.6**
Angola	20.2	4.2	24.4	373.0	93.1	246.5	115.7	300.6	16.2	376.7	12.5	166.7	0.0	
Benin	6.3	4.0	10.3	304.7	119.2	190.7	37.3	70.7	13.0	180.6	0.0		0.0	
Botswana	3.6	0.3	3.9	162.6	23.5	108.3	155.9	-11.3	5.9	196.7	-1.2	-100.0	0.0	
Burkina Faso	12.5	18.0	30.5	547.8	197.2	267.5	37.0	87.5	41.1	234.9	0.3		0.0	
Burundi	1.9	6.6	8.5	921.5	299.4	354.2	84.4	90.8	10.4	335.5	0.0		0.0	
Cameroon	10.1	1.2	11.3	181.8	23.4	107.6	34.1	34.0	13.5	99.3	0.0		0.0	
Central African Republic	0.9	0.6	1.5	178.1	87.5	125.0	45.0	40.7	1.8	128.6	0.0		0.0	
Chad	2.9	2.4	5.3	294.7	91.8	147.2	7.9	102.6	6.3	143.2	0.0		0.0	

COUNTRY	EGGS, CHANGE BETWEEN 2000 AND 2030													
	Consumption								Production		Import		Export	
	Absolute change			Percent change			Proportion of change due to change in consump. rates %	Proportion of change due to change in population %	Absolute change	Percent change	Absolute change	Percent change	Absolute change	Percent change
	Urban	Rural	Total	Urban	Rural	Total								
Congo	2.7	0.8	3.5	258.7	108.3	194.4	51.4	179.0	3.2	266.7	1.3	108.3	0.0	
Cote d'Ivoire	38.5	16.0	54.5	334.9	103.9	202.6	88.8	39.4	65.6	204.4	-0.2	-100.0	0.0	
Dem. Rep. of the Congo	19.7	17.9	37.6	1 178.2	507.8	723.1	203.8	89.1	50.8	725.7	-0.2	-50.0	0.0	
Eritrea	2.0	2.9	4.9	711.2	240.6	326.7	83.0	94.8	5.5	305.6	0.0		0.0	
Ethiopia	28.2	58.7	86.9	623.0	254.3	314.9	99.2	81.8	99.9	315.1	0.0		0.0	
Gabon	2.4	0.1	2.5	172.7	36.1	156.3	46.1	50.1	3.2	160.0	0.0		0.0	
Gambia	2.0	0.3	2.3	248.8	51.2	164.3	96.6	156.4	1.8	257.1	1.0	100.0	0.0	
Ghana	36.0	13.2	49.2	471.5	155.9	305.6	108.4	50.3	65.9	309.4	-0.1	-100.0	0.0	
Guinea	12.4	8.2	20.6	363.2	141.7	223.9	57.0	62.7	25.1	204.1	0.1		0.0	
Kenya	22.6	28.4	51.0	238.6	78.0	111.1	43.7	26.7	58.8	98.7	0.4		0.0	
Lesotho	0.8	0.5	1.3	291.3	46.0	100.0	112.1	-11.1	1.7	113.3	-0.1	-100.0	0.0	
Liberia	7.4	1.6	9.0	286.4	75.5	191.5	27.7	144.9	11.0	255.8	0.4	25.0	0.0	
Madagascar	13.1	12.6	25.7	305.9	123.3	177.2	24.7	83.6	33.6	176.8	-0.1	-100.0	0.0	
Malawi	10.2	12.3	22.5	390.5	84.4	130.8	28.6	66.1	25.1	129.4	0.0	0.0	0.0	
Mali	10.7	9.0	19.7	528.6	184.9	285.5	32.0	86.0	28.6	240.3	0.2		0.0	
Mauritania	4.2	2.4	6.6	206.6	101.6	150.0	18.6	96.2	8.5	173.5	-0.6	-100.0	0.0	
Mauritius	2.1	0.7	2.8	91.6	50.7	75.7	31.7	15.3	4.0	76.9	0.0		0.0	
Mozambique	13.8	7.0	20.8	390.8	93.0	187.4	73.6	38.9	27.6	197.1	-0.2	-16.7	0.0	

COUNTRY	EGGS, CHANGE BETWEEN 2000 AND 2030													
	Consumption								Production		Import		Export	
	Absolute change			Percent change			Proportion of change due to change in consump. rates %	Proportion of change due to change in population %	Absolute change	Percent change	Absolute change	Percent change	Absolute change	Percent change
	Urban	Rural	Total	Urban	Rural	Total								
Niger	2.5	6.0	8.5	226.9	107.3	126.9	-12.9	119.7	11.1	108.8	0.0	0.0	0.0	
Nigeria	564.9	192.9	757.8	334.1	88.9	196.3	56.8	70.6	861.6	196.6	-0.4	-100.0	0.0	
Rwanda	1.8	3.0	4.8	525.9	194.2	252.6	87.2	65.2	5.4	245.5	0.0		0.0	
Senegal	39.7	27.8	67.5	368.3	187.7	263.7	79.0	62.2	83.4	252.7	-0.2	-100.0	0.0	
Sierra Leone	6.5	4.4	10.9	236.6	99.2	151.4	33.3	79.8	12.9	167.5	0.3	16.7	0.0	
Somalia	5.8	5.0	10.8	874.6	403.5	568.4	105.6	136.5	13.2	528.0	0.0		0.0	
South Africa	120.6	-3.9	116.7	81.0	-3.4	44.4	40.5	-3.3	125.9	38.3	0.0		-1.1	-26.8
Sudan	48.9	16.3	65.2	334.2	69.8	171.6	58.5	51.5	73.0	162.9	-0.1	-100.0	0.0	
Swaziland	1.3	1.3	2.6	204.5	65.4	100.0	301.9	-6.4	4.1	455.6	-0.3	-12.5	-0.3	-100.0
Togo	7.4	3.3	10.7	373.6	120.5	227.7	62.6	58.3	13.5	214.3	0.0	0.0	0.0	
Uganda	8.6	27.7	36.3	480.6	211.5	243.6	19.7	128.9	44.2	222.1	0.2		0.0	
United Republic of Tanzania	20.0	7.8	27.8	156.4	17.3	48.3	-8.5	58.5	30.4	48.7	-0.1	-9.1	-0.1	-100.0
Zambia	37.8	36.8	74.6	259.1	138.9	181.5	81.9	40.9	83.6	180.2	-0.1	-100.0	-0.8	-100.0
Zimbabwe	10.9	5.0	15.9	192.3	44.9	94.6	72.7	0.8	18.2	85.0	0.0		0.1	5.3
High income countries	**2 138.6**	**-227.9**	**1 910.7**	**34.9**	**-13.2**	**24.3**			**2 237.6**	**25.0**	**-29.6**	**-21.5**	**-21.1**	**-16.6**
Australia	37.0	-3.5	33.5	31.0	-20.4	24.6	0.1	20.1	40.6	24.5	-1.2	-100.0	-1.2	-100.0
Canada	47.8	-6.3	41.5	16.0	-12.3	11.9	-6.5	18.9	51.0	13.7	-17.6	-46.8	-15.4	-100.0

COUNTRY	EGGS, CHANGE BETWEEN 2000 AND 2030													
	Consumption								Production		Import		Export	
	Absolute change			Percent change			Proportion of change due to change in consump. rates %	Proportion of change due to change in population %	Absolute change	Percent change	Absolute change	Percent change	Absolute change	Percent change
	Urban	Rural	Total	Urban	Rural	Total								
Iceland	0.0	0.2	0.2	3.2	50.1	11.1	-4.1	13.9	0.1	4.5	-0.1	-100.0	-0.3	-100.0
Israel	23.6	0.7	24.3	39.6	12.0	37.2	-5.7	36.0	33.1	37.6	-0.3	-100.0	1.0	25.0
Japan	389.3	-115.9	273.4	24.0	-13.8	11.1	16.1	-4.6	286.3	11.3	0.5	1.3	-0.2	-100.0
New Zealand	3.8	-0.6	3.2	12.0	-12.4	8.7	-6.2	14.4	3.4	7.5	-0.4	-100.0	-0.8	-100.0
Norway	4.8	-0.4	4.4	13.5	-4.7	9.8	0.0	8.9	4.4	8.9	-0.8	-100.0	-1.2	-52.2
Republic of Korea	414.5	32.2	446.7	113.8	35.8	98.4	76.4	6.1	503.4	98.9	0.3	11.1	-0.1	-100.0
Saudi Arabia	141.8	13.1	154.9	170.9	73.1	153.5	22.4	71.0	207.9	153.9	-5.8	-100.0	-5.3	-100.0
Switzerland	-1.9	-3.6	-5.5	-3.4	-22.2	-7.6	-0.9	-14.2	-7.1	-19.3	1.0	2.6	0.0	
Trinidad and Tobago	1.0	0.8	1.8	137.3	25.0	46.2	49.6	3.5	-0.9	-27.3	2.3	85.2	0.0	
United States of America	1 076.8	-144.5	932.3	31.2	-21.4	22.6	-4.7	24.7	1 115.4	22.3	-7.5	-100.0	2.4	2.5

Annex D. Consumption of livestock commodities by city

The following tables report city-level data on population, consumption of the different livestock commodities and the growth between 2000 and 2030 for the most populous or significant cities in each region. The 'percentage of national growth attributable to city' represents the contribution of each city to national growth in demand. Consumption values are in thousands of metric tonnes, while growth is expressed as percentage.

Table D 1. Consumption and consumption growth between 2000 and 2030 of beef and milk for selected cities.

COUNTRY	CITY	POPULATION			BEEF				MILK			
		Pop 2000 (millions)	Pop 2030 (millions)	Pop growth 2000-2030 %	Cons 2000	Cons 2030	Cons Growth 2000-2030 %	Percentage of national growth attributable to city	Cons 2000	Cons 2030	Cons Growth 2000-2030 %	Percentage of national growth attributable to city
East Asia and Pacific												
China	Shenzhen	26.3	50.4	92	125.1	485.1	288	5	267.2	1 084.2	306	5
China	Shanghai	13.7	26.4	92	67.7	263.4	289	3	144.6	588.7	307	3
China	Bejing	10.0	19.2	92	40.8	159.7	291	2	87.2	356.9	309	2
China	Tianjin	6.8	13.0	92	24.6	96.3	291	1	52.6	215.2	309	1
Dem. People's Rep. of Korea	Pyongyang	2.4	3.2	35	5.1	11.9	135	35	21.0	44.5	112	36
Indonesia	Jakarta	19.9	42.8	115	47.0	187.7	299	24	188.1	606.4	222	27
Indonesia	Surabaya	5.1	11.0	115	11.8	47.2	299	6	47.3	152.6	222	7
Malaysia	Kuala Lampur	3.6	7.3	103	26.9	92.0	242	32	245.2	612.4	150	36
Myanmar	Yangon City	4.2	9.2	123	14.2	47.9	238	29	80.2	265.0	230	29
Philippines	Metro Manila	12.2	24.0	97	145.4	478.2	229	62	617.5	1 701.3	176	65
Thailand	Bangkok	8.8	16.1	82	41.5	99.4	140	40	246.8	956.4	287	32
Viet Nam	Thanh Pho Ho Chi Minh	5.1	12.2	139	15.8	47.4	200	23	26.1	118.1	353	18
Eastern Europe and Central Asia												
Russian Federation	Moscow	12.7	10.9	-14	265.0	278.5	5	66	2 447.5	2 436.7	0	1
Russian Federation	Sankt Peterburg	5.1	4.4	-14	73.1	76.7	5	18	675.0	671.3	-1	0
Turkey	Istanbul	11.6	18.7	62	51.5	109.4	113	22	1 181.1	2 359.7	100	22
Turkey	Ankara	3.3	5.3	62	18.6	39.7	113	8	427.5	855.7	100	8

COUNTRY	CITY	POPULATION			BEEF				MILK			
		Pop 2000 (millions)	Pop 2030 (millions)	Pop growth 2000-2030 %	Cons 2000	Cons 2030	Cons Growth 2000-2030 %	Percentage of national growth attributable to city	Cons 2000	Cons 2030	Cons Growth 2000-2030 %	Percentage of national growth attributable to city
Latin America/Caribbean												
Argentina	Buenos Aires	12.6	17.3	38	796.3	1 013.6	27	47	3 033.2	4 583.8	51	43
Brazil	Sao Paulo	19.4	28.2	45	881.7	1 497.1	70	20	2 886.0	5 531.0	92	19
Brazil	Rio de Janeiro	11.2	16.3	45	489.9	831.5	70	11	1 603.7	3 072.2	92	11
Brazil	Belo Horizonte	4.2	6.1	45	189.0	320.9	70	4	618.7	1 185.7	92	4
Chile	Santiago	5.5	7.8	43	104.9	190.5	82	38	555.3	1 128.7	103	37
Colombia	Bogota	6.3	10.3	62	64.3	122.2	90	12	412.4	883.8	114	11
Dominican Republic	Santo Domingo	2.2	3.8	73	22.9	47.2	107	58	167.1	353.7	112	57
Mexico	Mexico City	26.9	40.4	50	363.1	761.5	110	25	2 258.2	4 326.9	92	26
Mexico	Monterrey	5.5	8.3	50	75.1	157.6	110	5	467.2	895.2	92	5
Mexico	Guadalajara	5.5	8.3	50	73.3	153.8	110	5	456.2	874.1	92	5
Peru	Lima	6.9	10.7	55	38.5	96.0	149	42	484.1	991.2	105	43
Venezuela	Caracas	6.3	10.3	64	134.0	251.4	88	39	671.5	1 257.8	87	39
North Africa/Middle East												
Algeria	Alger	3.6	6.7	86	22.2	68.2	207	23	514.0	1 210.4	135	25
Egypt	Al Qahirah	11.4	21.5	88	118.5	255.6	116	20	488.1	1 159.0	137	19
Egypt	Al Iskandariyah	3.8	7.1	88	31.5	67.9	116	5	129.7	307.9	137	5
Egypt	Asyut	3.3	6.3	88	109.5	236.3	116	18	451.2	1 071.4	137	18
Iran (Islamic Republic of)	Tehran	9.6	16.6	72	65.1	165.4	154	29	792.9	1 818.9	129	30

COUNTRY	CITY	POPULATION			BEEF				MILK			
		Pop 2000 (millions)	Pop 2030 (millions)	Pop growth 2000-2030 %	Cons 2000	Cons 2030	Cons Growth 2000-2030 %	Percentage of national growth attributable to city	Cons 2000	Cons 2030	Cons Growth 2000-2030 %	Percentage of national growth attributable to city
Iraq	Baghdad	5.5	11.2	103	15.4	96.4	525	34	202.0	1 177.0	483	34
Jordan	Amman	2.4	4.3	80	15.1	29.5	95	65	198.4	457.7	131	64
Lebanon	Beirut	1.3	1.9	41	18.5	44.0	138	57	218.0	349.1	60	60
Libyan Arab Jamahiriya	Tripoli	1.9	3.2	68	6.6	15.3	133	33	104.2	216.1	107	33
Morocco	Casablanca	3.4	6.2	80	30.7	66.8	118	34	217.5	507.9	134	33
Syrian Arab Republic	Damascus	2.1	4.6	115	5.0	15.7	214	15	158.9	411.3	159	16
Tunisia	Tunis	1.9	2.9	54	16.7	33.9	103	39	252.7	525.1	108	38
Yemen	Sanaa	1.3	6.5	384	5.2	30.1	484	19	49.6	276.6	457	19
South Asia												
Afghanistan	Kabul	2.0	7.9	297	9.3	51.0	449	15	109.4	493.8	351	15
Bangladesh	Dhaka	6.5	18.1	178	15.2	51.6	240	21	166.8	707.1	324	19
Bangladesh	Chittagong	2.3	6.4	178	5.5	19.0	247	8	60.1	260.0	333	7
India	Mumbai	17.4	35.6	104	45.1	99.6	121	4	1 141.6	3 672.1	222	3
India	Delhi Municipality	14.3	29.2	104	44.8	99.0	121	4	1 134.5	3 653.2	222	3
India	Kolkata	12.8	26.2	104	42.1	93.2	121	4	1 067.5	3 437.5	222	3
Pakistan	Karachi	9.9	28.4	186	73.0	281.5	285	15	1 867.4	6 818.4	265	15
Pakistan	Lahore	5.5	15.7	186	38.3	148.3	287	8	979.2	3 591.1	267	8
Sri Lanka	Colombo	2.0	3.2	59	3.4	5.9	75	26	75.4	153.8	104	21

COUNTRY	CITY	POPULATION			BEEF				MILK			
		Pop 2000 (millions)	Pop 2030 (millions)	Pop growth 2000-2030 %	Cons 2000	Cons 2030	Cons Growth 2000-2030 %	Percentage of national growth attributable to city	Cons 2000	Cons 2030	Cons Growth 2000-2030 %	Percentage of national growth attributable to city
Sub-Saharan Africa												
Angola	Luanda	3.7	12.4	237	31.0	131.5	324	52	62.5	268.1	329	52
Cote d'Ivoire	Abidjan	2.0	4.3	112	13.3	41.5	213	45	28.4	83.0	192	46
Dem. Rep. of the Congo	Kinshasa	2.7	9.7	262	3.2	26.8	743	27	6.1	40.2	561	28
Ethiopia	Addis Ababa	2.9	10.1	256	16.3	65.3	301	14	69.3	313.9	353	13
Ghana	Accra	2.4	5.9	145	4.2	16.9	306	27	17.8	62.6	251	28
Kenya	Nairobi	2.3	5.2	126	31.7	95.3	200	28	284.9	739.6	160	32
Nigeria	Lagos	8.5	22.8	169	32.2	151.4	371	16	91.4	297.5	226	18
Nigeria	Kano	3.4	9.0	169	9.2	43.2	371	5	26.1	84.9	226	5
Nigeria	Ibadan	2.8	7.6	169	9.7	45.7	371	5	27.6	89.8	226	5
Senegal	Dakar	2.5	5.8	136	12.3	33.6	174	38	66.5	170.7	157	39
South Africa	Johannesburg	14.5	17.4	20	106.8	150.2	41	64	456.0	700.7	54	45
South Africa	Durban	3.0	3.6	20	44.6	62.7	41	27	190.5	292.7	54	19
Sudan	Al Khartum	7.1	19.1	170	42.4	142.9	237	34	685.9	2 400.8	250	34
United Republic of Tanzania	Dar es Salaam	2.1	6.0	183	16.3	57.5	253	18	58.8	230.3	292	17
High Income Countries												
Australia	Sydney	4.8	6.4	31	139.3	168.4	21	25	889.8	1 111.0	25	24
Australia	Melbourne	3.6	4.7	31	144.3	174.5	21	26	921.5	1 151.4	25	25
Canada	Toronto	5.6	7.2	27	182.9	227.9	25	24	1 121.9	1 487.6	33	23

COUNTRY	CITY	POPULATION			BEEF				MILK			
		Pop 2000 (millions)	Pop 2030 (millions)	Pop growth 2000-2030 %	Cons 2000	Cons 2030	Cons Growth 2000-2030 %	Percentage of national growth attributable to city	Cons 2000	Cons 2030	Cons Growth 2000-2030 %	Percentage of national growth attributable to city
Canada	Montreal	3.6	4.6	27	132.9	158.6	19	14	815.2	1 035.1	27	14
Israel	Jerusalem	5.0	7.6	51	107.7	169.8	58	91	1 097.8	1 815.9	65	90
Japan	Tokyo	78.6	83.8	7	607.0	1 018.3	68	68	4 225.4	6 109.8	45	76
Japan	Sapporo	3.4	3.6	7	23.4	39.3	68	3	162.8	235.7	45	3
Republic of Korea	Seoul	19.8	22.9	16	226.3	406.7	80	50	533.0	1 243.6	133	48
Republic of Korea	Pusan	5.1	5.9	16	54.5	95.9	76	12	128.3	293.3	129	11
Saudi Arabia	Jiddah	3.9	8.1	111	14.4	48.3	236	26	452.3	1 248.1	176	26
Saudi Arabia	ArRiyadh	3.6	7.5	111	13.3	44.7	236	24	419.0	1 156.3	176	24
United States of America	New York	23.2	33.2	43	1 089.3	1 288.6	18	20	6 423.5	9 064.5	41	13
United States of America	Los Angeles	17.8	25.4	43	766.1	909.3	19	14	4 517.8	6 395.9	42	9
United States of America	Chicago	9.9	14.1	43	444.0	527.5	19	8	2 618.4	3 710.5	42	5

Table D 2. Consumption and consumption growth between 2000 and 2030 of mutton and pork for selected cities.

COUNTRY	CITY	POPULATION			MUTTON				PORK			
		Pop 2000 (millions)	Pop 2030 (millions)	Pop growth 2000-2030 %	Cons 2000	Cons 2030	Cons Growth 2000-2030 %	Percentage of national growth attributable to city	Cons 2000	Cons 2030	Cons Growth 2000-2030 %	Percentage of national growth attributable to city
East Asia and Pacific												
China	Shenzhen	26.3	50.4	92	65.4	170.6	161	7	974.1	2 510.9	158	7
China	Shanghai	13.7	26.4	92	35.4	92.6	162	4	527.1	1 363.3	159	4
China	Bejing	10.0	19.2	92	21.3	56.2	163	2	317.9	826.6	160	2
China	Tianjin	6.8	13.0	92	12.9	33.9	163	1	191.6	498.3	160	1
Dem. People's Rep. of Korea	Pyongyang	2.4	3.2	35	2.6	6.7	153	34	34.7	74.0	113	36
Indonesia	Jakarta	19.9	42.8	115	9.1	26.4	191	29	55.1	317.9	477	22
Indonesia	Surabaya	5.1	11.0	115	2.3	6.6	191	7	13.9	80.0	477	6
Malaysia	Kuala Lampur	3.6	7.3	103	3.1	6.3	102	41	36.0	99.6	177	34
Myanmar	Yangon City	4.2	9.2	123	1.0	3.7	271	28	13.1	60.9	366	25
Philippines	Metro Manila	12.2	24.0	97	13.6	36.5	168	67	425.0	1 306.3	207	63
Thailand	Bangkok	8.8	16.1	82	0.1	0.2	82	30	84.3	258.8	207	34
Viet Nam	Thanh Pho Ho Chi Minh	5.1	12.2	139	0.4	1.4	258	17	112.2	503.7	349	18
EasternEurope and Central Asia												
Russian Federation	Moscow	12.7	10.9	-14	15.8	20.6	31	13	228.1	250.5	10	20
Russian Federation	Sankt Peterburg	5.1	4.4	-14	4.3	5.7	31	4	62.9	69.0	10	5
Turkey	Istanbul	11.6	18.7	62	53.7	94.1	75	24				
Turkey	Ankara	3.3	5.3	62	19.4	34.1	76	9				

COUNTRY	CITY	POPULATION			MUTTON				PORK			
		Pop 2000 (millions)	Pop 2030 (millions)	Pop growth 2000-2030 %	Cons 2000	Cons 2030	Cons Growth 2000-2030 %	Percentage of national growth attributable to city	Cons 2000	Cons 2030	Cons Growth 2000-2030 %	Percentage of national growth attributable to city
Latin America/Caribbean												
Argentina	Buenos Aires	12.6	17.3	38	21.3	34.7	63	42	104.7	148.8	42	44
Brazil	Sao Paulo	19.4	28.2	45	17.0	31.0	82	19	240.9	645.3	168	18
Brazil	Rio de Janeiro	11.2	16.3	45	9.5	17.2	82	11	133.9	358.4	168	10
Brazil	Belo Horizonte	4.2	6.1	45	3.7	6.6	82	4	51.7	138.3	168	4
Chile	Santiago	5.5	7.8	43	4.0	6.6	62	39	80.3	141.0	76	38
Colombia	Bogota	6.3	10.3	62	1.1	1.9	68	12	8.3	24.4	192	11
Dominican Republic	Santo Domingo	2.2	3.8	73	0.4	0.4	20	0	21.0	67.5	222	49
Mexico	Mexico City	26.9	40.4	50	23.3	35.7	53	29	248.3	470.5	90	26
Mexico	Monterrey	5.5	8.3	50	4.8	7.4	53	6	51.4	97.3	90	5
Mexico	Guadalajara	5.5	8.3	50	4.7	7.2	53	6	50.2	95.1	90	5
Peru	Lima	6.9	10.7	55	10.8	19.1	77	44	28.1	82.8	194	42
Venezuela	Caracas	6.3	10.3	64	3.1	5.3	73	41	38.3	63.3	65	41
North Africa/Middle East												
Algeria	Alger	3.6	6.7	86	28.3	67.7	139	25	0.0	0.0	-16	0
Egypt	Al Qahirah	11.4	21.5	88	15.0	32.9	119	20	0.4	0.7	88	19
Egypt	Al Iskandariyah	3.8	7.1	88	4.0	8.7	119	5	0.1	0.2	88	5
Egypt	Asyut	3.3	6.3	88	13.9	30.4	119	18	0.4	0.7	88	18
Iran (Islamic Republic of)	Tehran	9.6	16.6	72	87.8	181.9	107	31				

COUNTRY	CITY	POPULATION			MUTTON				PORK			
		Pop 2000 (millions)	Pop 2030 (millions)	Pop growth 2000-2030 %	Cons 2000	Cons 2030	Cons Growth 2000-2030 %	Percentage of national growth attributable to city	Cons 2000	Cons 2030	Cons Growth 2000-2030 %	Percentage of national growth attributable to city
Iraq	Baghdad	5.5	11.2	103	9.1	76.4	736	34				
Jordan	Amman	2.4	4.3	80	13.1	31.8	143	64	0.0	0.1	80	0
Lebanon	Beirut	1.3	1.9	41	5.0	7.8	55	60	6.5	10.3	59	60
Libyan Arab Jamahiriya	Tripoli	1.9	3.2	68	11.4	26.8	134	33				
Morocco	Casablanca	3.4	6.2	80	32.1	72.3	126	33	0.1	0.2	80	34
Syrian Arab Republic	Damascus	2.1	4.6	115	19.9	49.2	147	16				
Tunisia	Tunis	1.9	2.9	54	17.0	33.4	96	39				
Yemen	Sanaa	1.3	6.5	384	4.4	25.7	482	19				
South Asia												
Afghanistan	Kabul	2.0	7.9	297	9.5	64.8	580	14				
Bangladesh	Dhaka	6.5	18.1	178	11.4	47.1	314	19				
Bangladesh	Chittagong	2.3	6.4	178	4.1	17.3	323	7				
India	Mumbai	17.4	35.6	104	11.7	31.8	171	3	9.8	37.5	283	3
India	Delhi Municipality	14.3	29.2	104	11.6	31.6	172	3	9.7	37.3	283	3
India	Kolkata	12.8	26.2	104	10.9	29.7	172	3	9.1	35.1	283	3
Pakistan	Karachi	9.9	28.4	186	41.6	123.5	197	16				
Pakistan	Lahore	5.5	15.7	186	21.8	65.1	198	9				
Sri Lanka	Colombo	2.0	3.2	59	0.2	0.8	217	16	0.2	0.6	270	15

COUNTRY	CITY	POPULATION			MUTTON				PORK			
		Pop 2000 (millions)	Pop 2030 (millions)	Pop growth 2000-2030 %	Cons 2000	Cons 2030	Cons Growth 2000-2030 %	Percentage of national growth attributable to city	Cons 2000	Cons 2030	Cons Growth 2000-2030 %	Percentage of national growth attributable to city
Sub-Saharan Africa												
Angola	Luanda	3.7	12.4	237	3.3	16.6	408	50	12.1	51.1	322	52
Cote d'Ivoire	Abidjan	2.0	4.3	112	2.5	6.6	166	48	3.2	10.7	233	44
Dem. Rep. of the Congo	Kinshasa	2.7	9.7	262	3.3	18.2	447	29	4.1	31.6	677	27
Ethiopia	Addis Ababa	2.9	10.1	256	3.4	14.7	332	13	0.1	0.3	256	12
Ghana	Accra	2.4	5.9	145	2.9	11.1	283	27	2.0	7.3	262	27
Kenya	Nairobi	2.3	5.2	126	6.2	16.7	172	30	1.3	6.8	443	22
Nigeria	Lagos	8.5	22.8	169	21.7	77.6	258	17	15.1	58.3	288	17
Nigeria	Kano	3.4	9.0	169	6.2	22.2	258	5	4.3	16.7	288	5
Nigeria	Ibadan	2.8	7.6	169	6.5	23.4	258	5	4.5	17.6	288	5
Senegal	Dakar	2.5	5.8	136	7.7	24.0	213	37	1.7	6.9	316	35
South Africa	Johannesburg	14.5	17.4	20	35.8	43.2	21	-113	23.7	38.7	63	39
South Africa	Durban	3.0	3.6	20	15.0	18.1	21	-47	9.9	16.2	63	16
Sudan	Al Khartum	7.1	19.1	170	36.9	184.7	400	29				
United Republic of Tanzania	Dar es Salaam	2.1	6.0	183	2.9	9.6	236	18	1.0	5.7	488	15
High Income Countries												
Australia	Sydney	4.8	6.4	31	60.0	67.8	13	32	63.9	94.3	48	21
Australia	Melbourne	3.6	4.7	31	62.1	70.3	13	33	66.2	97.7	48	22
Canada	Toronto	5.6	7.2	27	4.6	6.1	33	22	165.7	207.3	25	24

COUNTRY	CITY	POPULATION			MUTTON				PORK			
		Pop 2000 (millions)	Pop 2030 (millions)	Pop growth 2000-2030 %	Cons 2000	Cons 2030	Cons Growth 2000-2030 %	Percentage of national growth attributable to city	Cons 2000	Cons 2030	Cons Growth 2000-2030 %	Percentage of national growth attributable to city
Canada	Montreal	3.6	4.6	27	3.4	4.3	27	13	120.4	144.2	20	14
Israel	Jerusalem	5.0	7.6	51	6.1	10.1	65	91	8.8	15.7	79	90
Japan	Tokyo	78.6	83.8	7	13.4	12.9	-4	14	1 127.9	1 357.0	20	133
Japan	Sapporo	3.4	3.6	7	0.5	0.5	-4	1	43.5	52.3	20	5
Republic of Korea	Seoul	19.8	22.9	16	2.4	4.5	93	51	424.6	746.3	76	51
Republic of Korea	Pusan	5.1	5.9	16	0.6	1.1	89	12	102.2	176.0	72	12
Saudi Arabia	Jiddah	3.9	8.1	111	32.4	89.0	174	26	0.1	0.1	111	14
Saudi Arabia	ArRiyadh	3.6	7.5	111	30.0	82.4	174	24	0.0	0.1	111	13
United States of America	New York	23.2	33.2	43	13.8	17.9	29	15	750.9	994.7	32	14
United States of America	Los Angeles	17.8	25.4	43	9.7	12.6	30	11	528.1	701.9	33	10
United States of America	Chicago	9.9	14.1	43	5.6	7.3	30	6	306.1	407.2	33	6

Table D 3. Consumption and consumption growth between 2000 and 2030 of poultry meat and eggs for selected cities.

COUNTRY	CITY	POPULATION			POULTRY MEAT				EGGS			
		Pop 2000 (millions)	Pop 2030 (millions)	Pop growth 2000-2030 %	Cons 2000	Cons 2030	Cons Growth 2000-2030 %	Percentage of national growth attributable to city	Cons 2000	Cons 2030	Cons Growth 2000-2030 %	Percentage of national growth attributable to city
East Asia and Pacific												
China	Shenzhen	26.3	50.4	92	288.5	1,066.6	270	5	485.6	1,084.2	123	9
China	Shanghai	13.7	26.4	92	156.1	579.1	271	3	262.8	588.7	124	5
China	Bejing	10.0	19.2	92	94.1	351.1	273	2	158.5	356.9	125	3
China	Tianjin	6.8	13.0	92	56.8	211.7	273	1	95.5	215.2	125	2
Dem. People's Rep. of Korea	Pyongyang	2.4	3.2	35	6.6	23.6	256	32	25.0	57.1	129	35
Indonesia	Jakarta	19.9	42.8	115	87.9	685.4	680	21	70.9	387.9	447	22
Indonesia	Surabaya	5.1	11.0	115	22.1	172.5	680	5	17.8	97.6	448	6
Malaysia	Kuala Lampur	3.6	7.3	103	176.1	494.4	181	34	59.8	158.2	164	35
Myanmar	Yangon City	4.2	9.2	123	22.9	152.4	566	23	8.6	42.8	399	24
Philippines	Metro Manila	12.2	24.0	97	237.6	1,075.4	353	59	191.4	607.6	217	62
Thailand	Bangkok	8.8	16.1	82	155.4	523.8	237	33	108.8	278.9	156	38
Viet Nam	Thanh Pho Ho Chi Minh	5.1	12.2	139	30.0	176.5	488	17	14.6	63.6	336	19
Eastern Europe and Central Asia												
Russian Federation	Moscow	12.7	10.9	-14	169.2	278.5	65	12	208.8	243.7	17	16
Russian Federation	Sankt Peterburg	5.1	4.4	-14	46.7	76.7	64	3	57.6	67.1	17	4
Turkey	Istanbul	11.6	18.7	62	93.2	365.2	292	19	81.6	179.0	119	21
Turkey	Ankara	3.3	5.3	62	33.7	132.4	293	7	29.5	64.9	120	8

COUNTRY	CITY	POPULATION			POULTRY MEAT				EGGS			
		Pop 2000 (millions)	Pop 2030 (millions)	Pop growth 2000-2030 %	Cons 2000	Cons 2030	Cons Growth 2000-2030 %	Percentage of national growth attributable to city	Cons 2000	Cons 2030	Cons Growth 2000-2030 %	Percentage of national growth attributable to city
Latin America/Caribbean												
Argentina	Buenos Aires	12.6	17.3	38	373.2	675.7	81	41	100.0	154.4	54	43
Brazil	Sao Paulo	19.4	28.2	45	742.9	1,474.6	98	19	179.1	331.9	85	19
Brazil	Rio de Janeiro	11.2	16.3	45	412.8	819.0	98	11	99.5	184.3	85	11
Brazil	Belo Horizonte	4.2	6.1	45	159.3	316.1	98	4	38.4	71.1	85	4
Chile	Santiago	5.5	7.8	43	114.6	232.7	103	37	26.7	49.4	85	38
Colombia	Bogota	6.3	10.3	62	48.4	186.3	285	10	25.9	60.9	136	11
Dominican Republic	Santo Domingo	2.2	3.8	73	67.5	189.5	181	51	15.3	46.4	204	50
Mexico	Mexico City	26.9	40.4	50	453.2	1,371.3	203	24	312.0	579.0	86	26
Mexico	Monterrey	5.5	8.3	50	93.8	283.7	203	5	64.5	119.8	86	5
Mexico	Guadalajara	5.5	8.3	50	91.6	277.0	203	5	63.0	117.0	86	5
Peru	Lima	6.9	10.7	55	117.5	488.1	315	41	44.2	111.0	151	42
Venezuela	Caracas	6.3	10.3	64	210.5	595.8	183	37	48.0	105.9	121	38
North Africa/Middle East												
Algeria	Alger	3.6	6.7	86	35.9	135.4	277	22	13.8	52.8	283	22
Egypt	Al Qahirah	11.4	21.5	88	86.7	365.0	321	18	20.8	72.2	248	18
Egypt	Al Iskandariyah	3.8	7.1	88	23.0	97.0	321	5	5.5	19.2	248	5
Egypt	Asyut	3.3	6.3	88	80.2	337.4	321	16	19.2	66.7	248	17
Iran (Islamic Republic of)	Tehran	9.6	16.6	72	170.9	606.8	255	27	94.0	259.9	176	28

COUNTRY	CITY	POPULATION			POULTRY MEAT				EGGS			
		Pop 2000 (millions)	Pop 2030 (millions)	Pop growth 2000-2030 %	Cons 2000	Cons 2030	Cons Growth 2000-2030 %	Percentage of national growth attributable to city	Cons 2000	Cons 2030	Cons Growth 2000-2030 %	Percentage of national growth attributable to city
Iraq	Baghdad	5.5	11.2	103	15.7	218.2	1288	34	5.2	34.6	571	34
Jordan	Amman	2.4	4.3	80	68.9	186.8	171	63	20.8	53.4	156	63
Lebanon	Beirut	1.3	1.9	41	40.1	93.1	132	57	9.9	18.4	85	58
Libyan Arab Jamahiriya	Tripoli	1.9	3.2	68	27.8	79.4	185	32	14.6	34.0	132	33
Morocco	Casablanca	3.4	6.2	80	56.1	192.1	243	30	44.0	120.0	173	31
Syrian Arab Republic	Damascus	2.1	4.6	115	12.5	84.0	575	14	11.6	31.3	169	16
Tunisia	Tunis	1.9	2.9	54	28.1	90.2	222	35	18.1	38.7	114	38
Yemen	Sanaa	1.3	6.5	384	10.4	97.5	834	18	3.1	24.7	695	18
South Asia												
Afghanistan	Kabul	2.0	7.9	297	1.0	17.5	1742	13	1.1	9.7	783	14
Bangladesh	Dhaka	6.5	18.1	178	9.8	113.3	1055	16	11.7	94.6	709	16
Bangladesh	Chittagong	2.3	6.4	178	3.5	41.7	1080	6	4.2	34.8	726	6
India	Mumbai	17.4	35.6	104	18.0	249.4	1286	3	26.1	145.3	458	3
India	Delhi Municipality	14.3	29.2	104	17.9	248.1	1288	3	25.9	144.5	458	3
India	Kolkata	12.8	26.2	104	16.8	233.5	1288	2	24.4	136.0	458	3
Pakistan	Karachi	9.9	28.4	186	26.8	237.3	785	13	23.6	160.7	580	13
Pakistan	Lahore	5.5	15.7	186	14.1	125.0	789	7	12.4	84.6	583	7
Sri Lanka	Colombo	2.0	3.2	59	6.9	32.5	371	15	4.5	14.8	229	16

COUNTRY	CITY	POPULATION			POULTRY MEAT				EGGS			
		Pop 2000 (millions)	Pop 2030 (millions)	Pop growth 2000-2030 %	Cons 2000	Cons 2030	Cons Growth 2000-2030 %	Percentage of national growth attributable to city	Cons 2000	Cons 2030	Cons Growth 2000-2030 %	Percentage of national growth attributable to city
Sub-Saharan Africa												
Angola	Luanda	3.7	12.4	237	13.6	76.5	463	49	3.0	15.3	405	50
Cote d'Ivoire	Abidjan	2.0	4.3	112	16.5	60.6	267	43	6.7	29.0	336	41
Dem. Rep. of the Congo	Kinshasa	2.7	9.7	262	3.5	53.6	1442	26	0.8	10.7	1256	26
Ethiopia	Addis Ababa	2.9	10.1	256	2.3	19.3	748	11	1.5	11.6	662	12
Ghana	Accra	2.4	5.9	145	5.3	29.5	451	25	2.5	14.7	497	25
Kenya	Nairobi	2.3	5.2	126	6.0	30.5	404	22	5.1	18.0	254	25
Nigeria	Lagos	8.5	22.8	169	16.7	96.3	477	16	36.4	161.4	343	16
Nigeria	Kano	3.4	9.0	169	4.8	27.5	477	4	10.4	46.1	343	5
Nigeria	Ibadan	2.8	7.6	169	5.0	29.1	477	5	11.0	48.7	343	5
Senegal	Dakar	2.5	5.8	136	15.9	72.0	352	35	6.2	29.3	375	34
South Africa	Johannesburg	14.5	17.4	20	148.1	290.2	96	32	49.8	90.1	81	35
South Africa	Durban	3.0	3.6	20	61.9	121.2	96	13	20.8	37.6	81	14
Sudan	Al Khartum	7.1	19.1	170	4.3	30.7	608	27	5.5	25.1	357	30
United Republic of Tanzania	Dar es Salaam	2.1	6.0	183	3.1	21.5	594	14	4.2	10.8	157	24
High Income Countries												
Australia	Sydney	4.8	6.4	31	110.3	177.3	61	21	24.4	32.0	31	23
Australia	Melbourne	3.6	4.7	31	114.3	183.8	61	21	25.3	33.2	31	24
Canada	Toronto	5.6	7.2	27	194.1	276.4	42	22	61.8	73.0	18	27

COUNTRY	CITY	POPULATION			POULTRY MEAT				EGGS			
		Pop 2000 (millions)	Pop 2030 (millions)	Pop growth 2000-2030 %	Cons 2000	Cons 2030	Cons Growth 2000-2030 %	Percentage of national growth attributable to city	Cons 2000	Cons 2030	Cons Growth 2000-2030 %	Percentage of national growth attributable to city
Canada	Montreal	3.6	4.6	27	141.0	192.3	36	13	44.9	50.8	13	14
Israel	Jerusalem	5.0	7.6	51	246.6	513.2	108	89	56.6	79.0	40	92
Japan	Tokyo	78.6	83.8	7	972.9	1,561.4	60	70	1,235.5	1,534.2	24	109
Japan	Sapporo	3.4	3.6	7	37.5	60.2	61	3	47.6	59.2	24	4
Republic of Korea	Seoul	19.8	22.9	16	209.6	542.4	159	48	189.7	407.1	115	49
Republic of Korea	Pusan	5.1	5.9	16	50.5	127.9	153	11	45.6	96.0	110	11
Saudi Arabia	Jiddah	3.9	8.1	111	165.1	468.7	184	26	23.5	64.4	174	26
Saudi Arabia	ArRiyadh	3.6	7.5	111	153.0	434.3	184	24	21.8	59.7	174	24
United States of America	New York	23.2	33.2	43	1,194.7	2,136.6	79	11	364.4	489.0	34	13
United States of America	Los Angeles	17.8	25.4	43	840.3	1,507.6	79	8	256.3	345.0	35	10
United States of America	Chicago	9.9	14.1	43	487.0	874.6	80	5	148.5	200.2	35	6