Global Marine Fisheries with Economic Growth

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ABSTRACT

This study explores the state of global marine fisheries and empirically analyzes its relationship to economic factors. We apply the pooled mean group estimator method to examine 70 fishing countries for the period of 1961-2010. We use both catch and the estimated size of stock as proxies for marine ecosystems. Our results confirm that economic growth initially leads to the deterioration of marine ecosystems. However, for a per capita income level of approximately 3,827 USD for the catch model and of 6,066 USD for the biomass model, we found beneficial impacts of economic growth on the sustainability of marine fisheries. Over the next two decades, we expect to see a decline in catch and indications of stock recovery.

Keywords: environmental Kuznets curve; global marine fisheries; pooled mean group

1. Introduction

The ocean provides an enormous amount of resources that are essential not only for providing basic human needs but also for supporting human wealth. However, the ocean's ability to provide sustainable benefits for human well-being is limited by its regenerative capacity, which is currently deteriorating due to overexploitation, pollution and coastal development (Halpern et al., 2012). This has spurred persistent debates regarding the state of global marine fisheries over the last two decades. Several scientists believe that marine fisheries tend to be unsustainable and that the stock of global marine fisheries is facing threats of serial depletion (Hutchings, 2000; Jackson et al., 2001; Pauly et al., 2002; Srinivasan et al., 2010; Worm et al., 2006, 2007; Zeller et al., 2009). This is indicated by the increasing number of fish species that are classified as overfished or as collapsed (Branch et al., 2011; Froese et al., 2012), by declining catch trends (Pontecorvo and Schrank, 2012; Zeller and Pauly, 2005), and by the declining mean trophic levels of catch (Myers and Worm, 2003; Pauly et al., 1998; Pauly and Palomares, 2005). Additionally, Worm et al. (2006) raised concerns even further by arguing that if current trends of fish over-exploitation continue, global marine fisheries are projected to collapse by 2048. On the other hand, arguments against this view contend that current fishing practices are sustainable and that concerns of the collapse of global marine fisheries are slightly exaggerated and misleading (Hilborn, 2007; Murawski et al., 2007; Pauly et al., 2013). Proponents of this view argue that assessments of stock abundance that use catch data as a proxy are not reliable, as a declining catch does not solely denote a declining stock and vice versa. Gephart et al. (2017) show that in addition to cases of fishery collapse, catch levels are also prone to a broad variety of disruptions and shocks such as natural and man-made disasters, policy changes, increasing fuel costs, and low fish prices. Hence, Worm et al.'s (2006) gloomy projections of the collapse of global marine fisheries, which are based on the assessment of catch time series data, are somewhat misleading (Hilborn, 2007; Murawski et al., 2007).

Regardless of ongoing disputes between these two contradictory views, the amount of fish stock that is being overfished and that has collapsed is rather high. Branch et al. (2011) explain that proportions of fish stocks that are overfished and that have collapsed have been stable in the range of 28–33% and 7–13%, respectively. This denotes an occurrence of resource deterioration due to the exploitation of fish that exceeds maximum sustainable yields and the regenerative capacities of oceans. Economists explain changes in resource availability and environmental degradation based on economic factors. In a simple case, resource degradation is a transient consequence of economic development that is inevitable. However, after reaching a certain level of economic growth, the beneficial impacts of economic growth on resource quality will be achieved, ameliorating damages to nature. If this holds for global marine fisheries, then stock decline can be only temporary and it need not be considered a threat to sustainability over the long term, as further economic growth is expected to lead to stock recovery through the institution of better management systems and policies. This is referred to as the environmental Kuznets curve (EKC) hypothesis. Alternatively, we might find a monotonic relationship or even complex relationship that mainly depends on resource stock estimates and catch data.

Most previous studies due to data availability issues have focused mainly on the impacts of economic growth on pollution levels, which act as an inversely proportional proxy for environmental quality (Grossman and Krueger, 1991; Managi et al., 2009). These studies aim to test the existence of the EKC hypothesis and to find a turning point in the economy after which environmental damages will be ameliorated. However, to the best of our knowledge, only a few studies have examined income-natural resource relationships (see for instance Ewers (2006), Nguyen Van and Azomahou (2007), Caviglia-Harris et al. (2009), and Al-mulali et al. (2015)), and none have examined global marine fisheries within this framework. Our main contributions are at least twofold. First, we attempt to estimate the abundance of marine fisheries by relying on a method proposed by Martell and Froese (2013). Second, we apply an economic model to assess the sustainability of global marine fisheries by examining historical relationships between global marine ecosystems and economic growth. We employ time-series catch and estimated stock data as proxies for measuring the state of the global marine ecosystem.

The remainder of this paper is organized as follows. Section 2 describes the current state of global marine fisheries and its association with economic development. Section 3 discusses the research methodology and data used. Section 4 presents the main study findings and an analysis of the results. Section 5 presents the study's conclusions and its policy implications.

2. Economic development and the state of global marine fisheries

The impacts of economic development on resource abundance can be differentiated into three stages (Grossman and Krueger, 1991). The first stage is referred to as the scale effect, which is characterized by a persistent utilization of heavy machinery, indicating a structural change in an economy. At this stage, economic development has negative impacts on the environment and spurs an upward trend of environmental degradation and resource depletion (Panayotou, 1993). However, as incomes increase, the structure of the economy may change, shifting from a resource-intensive economy to a service- and knowledge-based technology-intensive economy (see Tsurumi and Managi (2010) for more information). This stage is referred to as the composition effect, which is characterized by the development of cleaner industries and by more stringent environmental regulations that limit environmental pressures. Tamaki et al. (2017) show that better resource management practices are beneficial not only for reducing resource exhaustion but also for increasing production efficiency. Finally, a wealthy nation is capable of allocating a higher share of R&D expenditures (Komen et al., 1997), leading to the invention of new technologies that will gradually replace obsolete technologies that tend to be dirtier and less efficient. This stage is referred to as the technical effect, which also contributes to improvements in environmental quality. The cumulative effects of these three different stages of economic development create an inverted U-shaped relationship between economic growth and resource abundance known as the EKC hypothesis.

Although the EKC hypothesis enticingly proposes the existence of a turning point after which further economic growth may lead to environmental improvements, it has some limitations that are worth mentioning. First, the estimated turning point of the EKC can occur amidst very high levels of income. Hence, the beneficial impacts of economic growth on environmental quality are difficult or even impossible to achieve. For instance, Jalil and Mahmud (2009), Bölük and Mert (2015) and Sugiawan and Managi (2016) find a relatively high EKC turning point that lies outside of the observed sample period for the case of carbon dioxide emissions. Second, the EKC hypothesis is not applicable to all environmental/resource problems. For instance, Sinha and Bhattacharya (2017) show a reverse trend of SO_2 emissions, supporting the existence of the EKC hypothesis for 139 cities in India for 2001-2013. However, Nguyen Van and Azomahou (2007) find no evidence of the EKC hypothesis for the case of deforestation in 59 developing countries for 1972-1994. In addition, Liao and Cao (2013) reject the validity of the EKC hypothesis for global carbon dioxide emissions, although they find a flattening trend in carbon dioxide emissions for high-income countries. Another caveat pertains to the fact that the beneficial impacts of economic growth on environmental quality are only temporary. De Bruyn et al. (1998) argue that over the long-term, new technologies will emerge, creating new pollutants and environmental problems. Hence, although the inverted U-shaped relationship is initially observed, a new turning point will appear, leading to a positive correlation between income and environmental degradation. As a result, an N-shaped curve is likely to be observed over the long term. Finally, the composition and technical effects of the economy may also have negative effects on the environment (Tsurumi and Managi, 2010). This might occur as a result of the poor implementation of environmental regulations or due to the invention of more resource-intensive technologies. If this occurs, then an EKC-type relationship is unlikely to be observed.

A scale effect for global marine fisheries was observed in the early nineteenth century, which was marked by the operation of steam trawlers, power winches, and diesel engines (Pauly et al., 2002). This industrialization process has resulted in overfishing and stock collapse (Branch et al., 2011; Froese et al., 2012) and in declining mean catch trophic levels (Myers and Worm, 2003; Pauly et al., 1998; Pauly and Palomares, 2005), suggesting a decline in environmental quality and resource abundance. Figure 1 shows the total catch of global marine fisheries obtained through the *Sea Around Us Project* (Pauly and Zeller, 2015). Despite continuous improvements made to fishing methods and technologies, global marine fish catches finally reached a peak in 1996 and declined after experiencing continuous growth for approximately four decades. Fortunately, this decline in the global catch was also followed by a decline in global fishery discards (Zeller and Pauly, 2005), which is attributed to advancements in technology and to the use of more efficient fishing practices.

The composition effect of the economy, which reflects structural changes in the economy, leads to the introduction of new regulatory means of supporting better fisheries management. For instance, the United Nations Convention on the Law of the Sea (UNCLOS), which came into force in 1994, and the individual transferable quota (ITQ) system introduced in the late 1970s act as countermeasures against the collapse of global marine fisheries by boosting the economic benefits of fisheries while maintaining their sustainability (Soliman, 2014). Under the UNCLOS, the nations of the world are required to maintain rates of marine fishery exploitation at a maximum sustainable yield (MSY). Similarly, the ITQ management system regulates the total allowable catch (TAC) for a particular fish stock and distributes quasi-ownership rights of the TAC to fishermen (Acheson et al., 2015). Despite flaws of the ITQ system (see for instance Acheson et al. (2015)), Costello et al. (2008) show that the ITQ management system helps not only retard the collapse of global marine fisheries but also helps rebuild stock.

3. Methodology

3.1. Estimating biomass stock

Unlike estimation methods for other renewable natural resources, estimating the abundance of marine fisheries is rather challenging. The most reliable means of determining stock status is the stock assessment technique, which involves conducting scientific surveys to collect data on fish age and size distributions and on catches per unit of effort. However, this method is costly to apply, is time intensive, and requires access to large volumes of data (Agnew et al., 2013). In addition, Kleisner et al. (2013) argue that the technique is only applicable for a small fraction of global stocks, and thus it is not a reliable method for portraying the status of global marine fisheries. They recommend using widely available indicators that can provide a better indication of the status of global marine fisheries, although such indicators may be less precise than those of the stock assessment method. Hence, rather than utilizing stock data drawn from the well-known RAM legacy database (Ricard et al., 2012), we prefer to estimate the stock based on catch time series data drawn through the *Sea Around Us Project* (Pauly and Zeller, 2015), which has broader coverage, accounting for more than 160 countries.

Some previous studies (e.g., Froese and Kesner-Reyes (2002), Pauly et al. (2008), Froese et al. (2012) and Kleisner et al. (2013)) employ the stock status plots (SSP) method, which uses widely available catch data to depict the state of global marine fisheries. However, the SSP method only reveals the qualitative status of fisheries, providing no estimations on the size of fish stocks. To make quantitative estimates of the global marine fish stock, we use a simple yet powerful Schaefer production function (Schaefer, 1954). This model is preferred due to its simplicity and attractive features in terms of determining returns based on fish stocks and effort. Additionally, the model is suited to depicting the state of global marine fisheries, as it uses catch data, which are widely available. The stock of biomass at time *t* is given by the following equation:

$$B_t = \left(B_{t-1} + r \cdot B_{t-1} \cdot \left(1 - {B_{t-1}}/{k}\right)\right) - C_{t-1} \tag{1}$$

where *B* is biomass, *C* is the annual catch, *r* is the intrinsic rate of population growth, and *k* is the parameter of the carrying capacity. While catch *C* time series data are widely available, other model parameters (*r*, *k*, and *B*) are rather difficult to obtain. However, Martell and Froese (2013) devise a simple means of estimating equation (1) that is strictly based on catch time series data.

They propose a means of estimating sets of feasible *r* and *k* pairs from a uniform distribution function satisfies the following model assumptions: (1) the estimated biomass is never collapsed, (2) the estimated biomass never exceeds the carrying capacity, and (3) the final stock lies within the assumed range of depletion. The value of *r* is determined based on the resilience classification of each species, which ranges from 0.05 to 0.5 for low resilience levels, from 0.2 to 1.0 for medium resilience levels and from 0.6 to 1.5 for high resilience levels. Meanwhile, the potential value of *k* is determined based on the maximum catch volume, which ranges from 1 to 50 times the maximum catch. Additional assumptions on the potential range of the initial and final volume of biomass must also be applied. These assumptions are made based on the ratio between respective catches and the maximum catch (B/k). When the B_0/k ratio is less than 0.5, the initial volume of biomass is assumed to account for approximately 0.5 to 0.9 of the carrying capacity. Otherwise, it ranges from 0.3 to 0.6 of the carrying capacity. Similarly, the final biomass is assumed to be approximately 0.3 *k* to 0.7 *k* when the B/k ratio is greater than 0.5. Otherwise, the value ranges from 0.01 *k* to 0.4 *k*. From these pre-determined value ranges, we randomly draw sets of *r*-*k* pairs that satisfy the aforementioned model assumptions. Rather than estimating the MSY, our primary interest is to estimate biomass trends. For this purpose, we take the geometric mean of *r, k,* and the maximum volume of initial biomass, which corresponds to each feasible set of *r*-*k* pairs, and include them in equation (1).

From *Sea Around Us Project* catch time series data (Pauly and Zeller, 2015), we estimate the stock of more than 1,400 species in 164 countries for 1950 – 2010 (see Table A1 in the appendix for more information). The catch data used in our estimation measure the volume of catches for all purposes in each respective country's exclusive economic zone (EEZ) based on domestic or foreign fleets. Figure 1 shows that the global stock has experienced a steady rate of decline along with an increasing catch volume. However, the rate of decline decreased over the time period, implying beneficial impacts of better fisheries management protocols. We carry out a further analysis of this trend by taking into account different characteristics of each country as is shown in Figure 2. We can see that some rich countries that have adopted quota-management systems such as Japan, the UK and the USA have managed to reduce their catch levels and to contribute significantly to declining levels of global catch. As a result, these countries are able to maintain or even recover their stock levels. On the other hand, declining levels of stock are observed for developing countries such as China, Indonesia and Malaysia. These countries are characterized by increasing scales of economy and by relatively high levels of population growth, which are likely to place escalating pressures on marine resources.

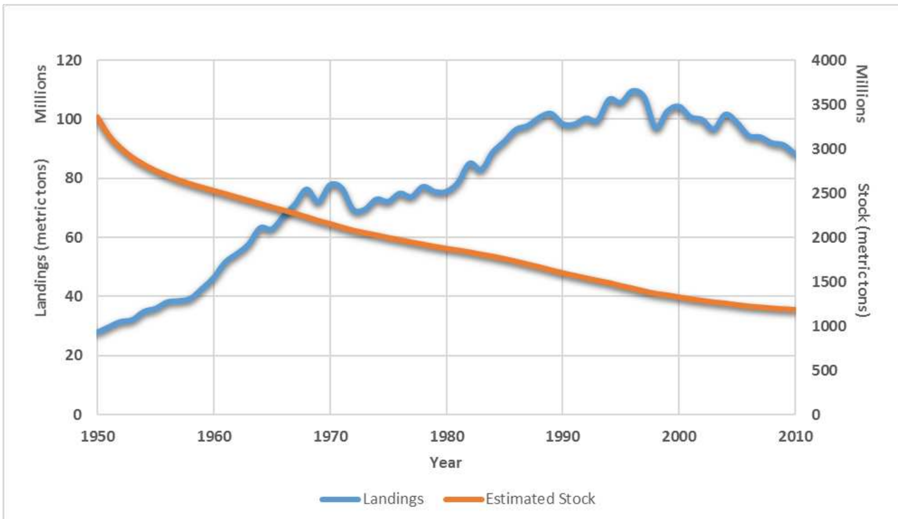

Figure 1. Global fisheries catch and estimated stock trends

3.2. Economic modeling

Our paper studies the relationship between economic growth and global marine resources based on the following general parametric models:

$$\ln C_t = \beta_0 + \beta_1 \ln Y_{it} + \beta_2 \ln {Y_{it}}^2 + \beta_3 \ln {Y_{it}}^3 + \beta_4 \ln P_{it} + \varepsilon_{it} \quad (2)$$

$$\ln B_t = \gamma_0 + \gamma_1 \ln Y_{it} + \gamma_2 \ln {Y_{it}}^2 + \gamma_3 \ln {Y_{it}}^3 + \gamma_4 \ln P_{it} + \varepsilon_{it} \quad (3)$$

where C is the volume of fish catch; B is the estimated volume of biomass; Y is the per capita gross domestic product (GDP); and ε_{it} is the standard error term. To avoid omitted variable bias, our models also include population density (P) as an independent variable. Halkos et al. (2017) show strong evidence that the decline of natural capital is associated with the increase of another type of capital, such as human capital. Additionally, Merino et al. (2012) show that variations in fish production are also driven by population growth. Furthermore, to account for trends in the variables, we include time trends in our models. We prefer to use the reduced-form model, as it allows us to study the relationship between income and resource abundance both directly and indirectly without being distracted by other variables (see List and Gallet (1999)).

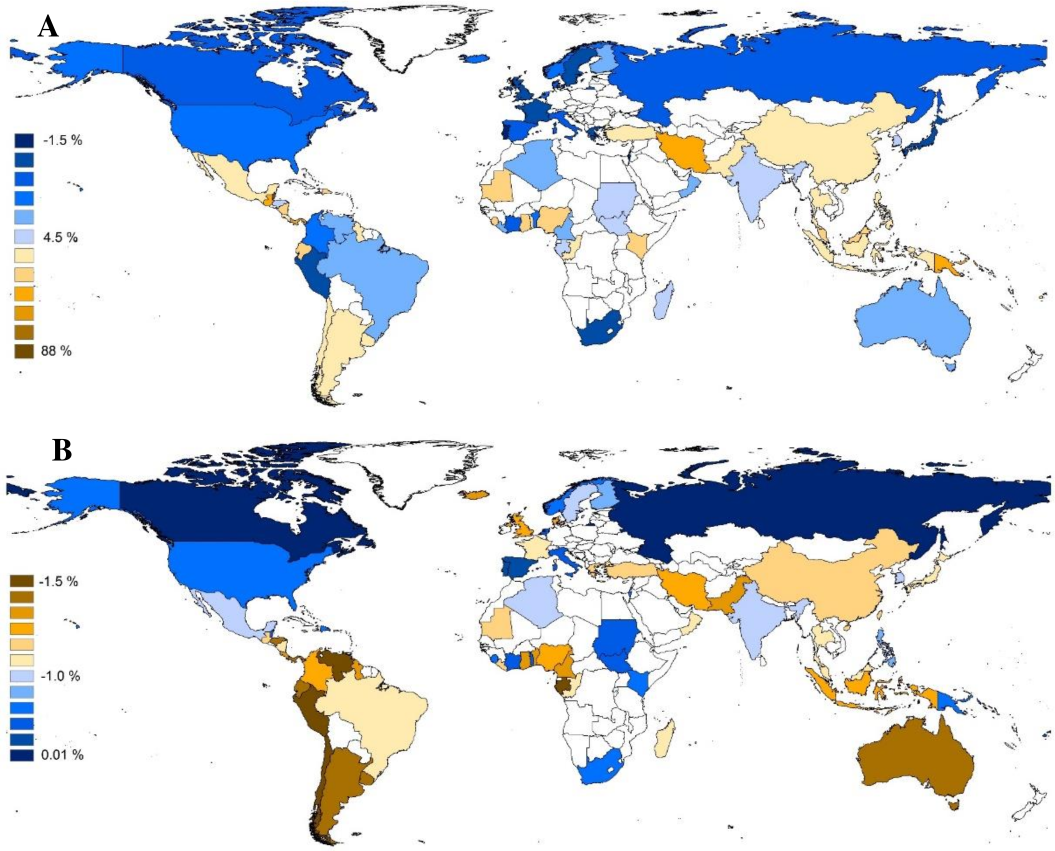

Figure 2. Comparison of world catch and estimated stock levels. **A**. Average annual catch changes from 1961 to 2010 (%). **B**. Average annual stock changes from 1961 to 2010 (%)

Our first model (referred to as the catch model) examines dynamic levels of catch, which act as an inversely proportional proxy for resource abundance, based on variations in economic development. However, a dispute over the reliability of using catch as a proxy for resource abundance might arise, as variations in catch levels are not simply caused by variations in resource abundance. Hence, to ensure the robustness of our findings, we use the estimated size of stock as a proxy for resource abundance in our second model (henceforth referred to as the biomass model). Both of our models provide several possible functional forms of the income-resources relationship[1], i.e., level, linear, quadratic, or cubic, depicting how economic growth will affect

[1] The functional form of the income-resource relationship is determined by the significance of the coefficients β_i and γ_i. A level-type relationship occurs when $\beta_1=\beta_2=\beta_3=0$ or $\gamma_1=\gamma_2=\gamma_3=0$, suggesting that there is no relationship between

resource abundance. A level-type relationship suggests that economic growth is neither harmful nor beneficial for resource abundance. Meanwhile, a linear-type relationship indicates constant pressures of economic growth on resource abundance. The EKC hypothesis is confirmed if there is an inverted U-shaped relationship between per capita income and the volume of catch or a U-shaped relationship between per capita income and the estimated volume of stock, suggesting the existence of a turning point in the economy after which economic growth is beneficial for resource abundance. Moreover, a cubic-type relationship follows either an N- or flipped N-shaped curve, suggesting the existence of a secondary turning point in the economy at which point the trend of the income-resource relationship is reversed a second time.

Our models involve nonstationary heterogeneous panel data of a large number of time-series and cross-sectional observations (50 years of observations for 70 countries). Hence, they cannot be estimated by simply pooling the data and by using fixed or random effect estimators, which assume identical slope coefficients across the groups. Additionally, estimating each group separately via the mean group estimator approach is also inappropriate, as it allows intercepts, slope coefficients, and error variances to differ across groups, overlooking the fact that some parameters may be similar across groups (Pesaran et al., 1999). Therefore, we use the pooled mean group (PMG) method, which combines pooling and averaging methods developed by Pesaran et al. (1999). The PMG method allows for heterogeneity in intercepts, short-run coefficients and error variances but restrains long-run coefficients as identical (Pesaran et al., 1999).

The PMG method requires that all variables are not integrated at an order of higher than 1. To obtain the integration properties of our panel data, we use panel unit root tests, which have a higher power compared to individual unit root tests for each cross-section (see for instance Levin et al. (2002)). We employ three panel unit root test methods, e.g., Im, Pesaran and Shin (IPS), Fisher-type Augmented Dickey-Fuller (ADF-Fisher) and Fisher-type Phillips–Perron (PP-Fisher) tests, as suggested by Al-mulali et al. (2015). The aforementioned panel unit root tests have a null hypothesis of non-stationarity and an alternative hypothesis of no panel unit root.

After confirming the stationarity of the variables, the autoregressive distributed lag (ARDL) representation of our models is given by the following equations:

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economic growth and resource abundance. Meanwhile, a linear-type relationship exists when $\beta_2=\beta_3=0$ and $\beta_1\neq0$; or $\gamma_2=\gamma_3=0$ and $\gamma_1\neq0$. Non-linear relationship between economic growth and resource abundance exists when β_2 and/or β_3 or when γ_2 and/or γ_3 are significantly different from zero.

$$\ln C_t = \beta_0 + \sum_{i=1}^{p} \beta_{1i} \ln C_{t-i} + \sum_{i=0}^{q} \beta_{2i} \ln Y_{t-i} + \sum_{i=0}^{r} \beta_{3i} (\ln Y_{t-1})^2 + \sum_{i=0}^{s} \beta_{4i} (\ln Y_{t-1})^3 + \sum_{i=0}^{t} \beta_{5i} \ln P_{t-i} + \varepsilon_{it} \quad (4)$$

$$\ln B_t = \gamma_0 + \sum_{i=1}^{p} \gamma_{1i} \ln C_{t-i} + \sum_{i=0}^{q} \gamma_{2i} \ln Y_{t-i} + \sum_{i=0}^{r} \gamma_{3i} (\ln Y_{t-1})^2 + \sum_{i=0}^{s} \gamma_{4i} (\ln Y_{t-1})^3 + \sum_{i=0}^{t} \gamma_{5i} \ln P_{t-i} + \varepsilon_{it} \quad (5)$$

and the error correction equations are given by

$$\Delta \ln C_t = \beta_0 + \sum_{i=1}^{p} \beta_{1i} \Delta \ln C_{t-i} + \sum_{i=0}^{q} \beta_{2i} \Delta \ln Y_{t-i} + \sum_{i=0}^{r} \beta_{3i} \Delta(\ln Y_{t-1})^2 + \sum_{i=0}^{s} \beta_{4i} \Delta(\ln Y_{t-1})^3 + \sum_{i=0}^{t} \beta_{5i} \Delta \ln ER_{t-i} + \pi\, ECT_{t-1} + \varepsilon_t \quad (6)$$

$$\Delta \ln B_t = \beta_0 + \sum_{i=1}^{p} \gamma_{1i} \Delta \ln C_{t-i} + \sum_{i=0}^{q} \gamma_{2i} \Delta \ln Y_{t-i} + \sum_{i=0}^{r} \gamma_{3i} \Delta(\ln Y_{t-1})^2 + \sum_{i=0}^{s} \gamma_{4i} \Delta(\ln Y_{t-1})^3 + \sum_{i=0}^{t} \gamma_{5i} \Delta \ln ER_{t-i} + \pi\, ECT_{t-1} + \varepsilon_t \quad (7)$$

where ECT_{t-1} is the lagged error-correction term and where π is the speed adjustment parameter, which measures the speed of the adjustment of the endogenous variable when there is a shock in the equilibrium. The coefficient of the lagged error correction term is expected to be negative and statistically significant. The optimal lag order is determined based on the smallest Akaike Information Criterion (AIC) and Schwarz's Bayesian Criterion (SBC) values. When the AIC and SBC provide different lag structures, we prefer to use the AIC to prevent our model from being parsimonious.

Data used in our analysis include a balanced panel for 70 countries for 1961-2010. The time span and selection of countries used were constrained by the availability of data. The volume of fish catches (*C*) and the estimated size of biomass (*B*) are measured in metric tons. Per capita real GDP (*Y*) is measured in constant 2005 US dollars. Population density (*P*) is measured in people per square kilometer of land area. Fish production, per capita real GDP and population density data were obtained from the World Bank World Development Indicators of 2015. The size of biomass was estimated from the *Sea Around Us Project* catch data (Pauly and Zeller, 2015). These data measure the volume of catches for all purposes for each respective country's exclusive economic zone (EEZ) for domestic or foreign fleets. Although our estimation may be less precise than that of the well-known RAM legacy database, it has broader coverage, making it more reliable in terms of reflecting the current state of global marine fisheries.

4. Results and discussion

Our evaluation begins with an examination of integration properties of the variables examined based on three types of panel unit root tests: IPS, ADF-Fisher, and PP-Fisher. The lag lengths of the panel unit root tests are selected based on the SBC value. The test results provided in Table 1 show that all of the variables were confirmed as stationary in the first difference.

Table 1. Panel unit root tests

Variables	IPS		ADF - Fisher		PP - Fisher	
	Individual Intercept	Individual Intercept and Trend	Individual Intercept	Individual Intercept and Trend	Individual Intercept	Individual Intercept and Trend
Levels						
ln *Y*	-0.753	0.947	212.021***	132.290	231.278***	90.378
ln *P*	-0.997	-0.904	206.113***	262.512***	745.435***	201.230***
ln *B*	11.410	6.587	80.4551	117.079	105.696	30.493
ln *C*	-1.912**	1.933	200.397***	117.715	284.791***	120.753
First Differences						
ln *Y*	-32.378***	-31.336***	1222.740***	1077.260***	1284.040***	1209.440***
ln *P*	-6.008***	-7.221***	321.120***	336.755***	246.980***	210.331***
ln *B*	-5.580***	-7.540***	301.976***	314.247***	272.804***	279.303***
ln *C*	-50.008***	-50.467***	1995.330***	1934.220***	2112.530***	3167.560***

Notes: *** , ** and *, denotes statistical significance at 1 percent, 5 percent and 10 percent levels, respectively.

We continue our analysis by determining the optimal lag length to be used in the ARDL model. Table 2 presents the top 5 models that minimize the AIC and SBC values by setting the maximum lag order at 4. From Table A1, we can see that for both models, the AIC and SBC present different model specifications. We prefer to use the lag structure recommended by the AIC to avoid oversimplifying the model. Thus, we have ARDL (2, 1, 1, 1, 1) for the catch model and ARDL (3, 1, 1, 1, 1) for the biomass model.

The results of the PMG estimations are provided in Table 3. From Table 3, we can see that over the long term, the impacts of economic growth on catch and biomass levels are significant. However, the estimated coefficients of the two models have opposite signs, indicating contradictory effects of economic growth on fish production and abundance. The positive and significant coefficient of the cubic term of the catch model suggests that the relationship between income and global levels of catch is best described by a flipped N-shaped curve. Meanwhile, the opposite sign of the cubic term in the biomass model suggests the presence of an N-shaped curve. From Table 3, we can also see that population growth is a significant predictor of our models, placing continuous pressure on the environment either by inducing higher catch levels or by deteriorating stock volumes.

Table 2. Model selection summary

Catch Model				Biomass Model			
AIC		SBC		AIC		SBC	
Value	ARDL	Value	ARDL	Value	ARDL	Value	ARDL
-1.203780	2, 1, 1, 1, 1	-0.269545	1, 1, 1, 1, 1	-6.983085	3, 1, 1, 1, 1	-5.916566	2, 1, 1, 1, 1
-1.201876	1, 1, 1, 1, 1	-0.139337	2, 1, 1, 1, 1	-6.982768	4, 1, 1, 1, 1	-5.786531	3, 1, 1, 1, 1
-1.189445	3, 1, 1, 1, 1	0.007109	3, 1, 1, 1, 1	-6.981008	2, 1, 1, 1, 1	-5.654102	4, 1, 1, 1, 1
-1.178145	4, 1, 1, 1, 1	0.150521	4, 1, 1, 1, 1	-6.969135	4, 4, 4, 4, 4	-5.539182	1, 1, 1, 1, 1
-1.148131	2, 2, 2, 2, 2	0.316540	1, 2, 2, 2, 2	-6.964262	4, 3, 3, 3, 3	-5.334852	2, 2, 2, 2, 2

Table 3. Long- and short-run estimates of the PMG

Variables	Catch Model: ARDL (2,1,1,1,1)	Biomass Model: ARDL (3,1,1,1,1)
Long Run Equation		
ln Y	-12.159620 (2.098682)***	4.427423 (1.070006)***
ln Y^2	1.818432 (0.278766)***	-0.594963 (0.139026)***
ln Y^3	-0.087393 (0.012222)***	0.026085 (0.005974)***
ln P	0.935060 (0.347013)***	-0.354170 (0.102098)***
Short Run Equation		
Δln B_{t-1}	-	0.591931 (0.029401)***
Δln B_{t-2}	-	0.033832 (0.025134)
Δln C_{t-1}	0.008472 (0.024725)	-
Δln Y	-244.7927 (110.4849)**	9.874210 (9.328565)
Δln Y^2	30.88965 (15.25024)**	-1.116540 (1.124477)
Δln Y^3	-1.337844 (0.737349)*	0.043495 (0.046442)
Δln P	-0.145190 (1.657649)	0.121631 (0.212329)
ECT_{t-1}	-0.238835 (0.017113)***	-0.045471 (0.006564)***
trend	0.002546 (0.001120)**	-0.000561(0.000122)***
cons	8.231275 (0.596153)***	0.241409 (0.035241)***
Number of countries	70	70
Number of obs.	3360	3290
Log likelihood	2604.376	12147.410
SE of regression	0.496437	0.045452

Notes:
1. *** , ** and * denote statistical significance at 1, 5 and 10 percent levels, respectively.
2. The numbers in parentheses are standard errors.

The catch model depicts a flipped N-shaped curve with an initial turning point as a local minimum occurring at an income level of 276 USD per capita and with the second turning point as a local maximum occurring at an income level of 3,827 USD per capita. Our findings suggest that in early stages of economic development, higher income levels lead to decreasing catch levels. During this stage, rather than being driven by economic growth, increasing catch levels are mainly caused by population growth. At this stage of economic development, the fisheries sector is dominated by traditional small-scale fisheries. However, after reaching the first turning point, increasing levels of income and population growth lead to higher catch levels, placing more pressure on the environment. This stage of economic development illustrates the scale and technological effects of global marine fisheries, which are marked by the rapid development of industrial-scale fisheries and by advances in technology. This industrialization process has led to the perceptible environmental deterioration of global fisheries (e.g., growing numbers of overfished or collapsed stocks and declining mean trophic catch levels). One the second turning point is reached, the trend reverses. While population growth places continuous pressure on catch levels, further economic growth leads to decreasing catch levels. At this stage of economic development, composition effects of the economy result in the creation of new environmental regulations and cleaner industries that preserve the environment and that undo damages of previous stages of development. However, our catch model does not support the conventional EKC hypothesis, as the flipped N-shaped curve suggests the existence of a secondary turning point beyond which environmental benefits of economic growth will be achieved.

For the biomass model, the first turning point, which is a local maximum, is observed at an income level of 661 USD per capita, and the second turning point, which is a local minimum, is observed at an income level of 6,066 USD per capita. Our model implies that initially, the exploitation of fish will lead to the development of stock, which conforms to Schaefer's (1954) production function model. However, beyond the primary turning point, further economic growth leads to stock decline due to the overexploitation of fish above its MSY. This trend reverses again after per capita income levels exceed the secondary turning point, suggesting beneficial impacts of economic growth on resource abundance.

For the short-term, we find significant impacts of economic development on short-run variations at the catch level. However, its impacts on biomass levels are not significant. We also find no significant impacts of population growth on catch and biomass levels for the short-term.

Furthermore, the lagged error-correction terms (ECT_{t-1}) for both of our models are negative and statistically significant, confirming the presence of cointegration between variables. These coefficients measure the speed of endogenous variable adjustment when there is a shock in the equilibrium. For the catch model, the absolute value of the lagged error-correction term is 0.238835, indicating a relatively high rate of adjustment in the presence of any shock to the equilibrium. A deviation from equilibrium catch levels in the current period will be corrected with 23.88 percent in the next period. On the other hand, the absolute value of the lagged error-correction term of the biomass model is only 0.045471, which is fairly low. In the presence of any shock to the equilibrium, the volume of biomass will be corrected by only approximately 4 percent in the next period. Our findings imply that while the impacts of scale effects of the economy are perceivable over the short term, beneficial impacts of composition effects of the economy on stock recovery can only be achieved over the long term.

Both of our models suggest that declines in resource abundance are an inevitable consequence of fisheries sector development. However, as the economy grows, the beneficial impacts of economic growth on resource abundance will be attained. This results from the adoption of more stringent environmental regulations, from the implementation of better fisheries management systems and from the use of more advanced technologies. Such processes will spur a decline in catch levels over the short term and stock recovery over the long term. Our findings support Hilborn's (2007) argument that declines in abundance should not be considered a serious problem, as they merely serve as a means of achieving sustainable yields.

Based on PMG estimates, we obtain a 20-year forecast from our models. For this purpose, we use the world population prospect of the United Nations to obtain the projected global population of 2030. We also assume that the global economy grows at a constant rate of 2.6 percent per annum. The forecasts of our models are shown in Figure 3. From Figure 3, we can see that after reaching its peak in 1996, global catch is predicted to decline until 2030. In 2030, the volume of global catch is expected to decrease by 2.8 percent from the 2010 level. Similar trends are observed for the biomass model. However, the trend reverses in 2027. In 2030, we expect to see improvements to global marine fish stocks, although the predicted volume of biomass should still exist below the 2010 level.

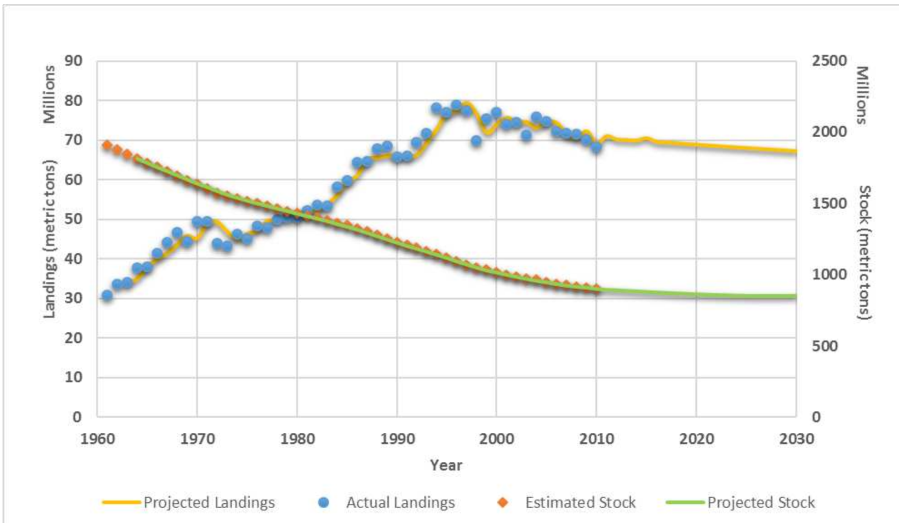

Figure 3. Projection of total volume of landing and stock for 70 fishing countries

A more detailed analysis of the top fishing countries examined (see Figure 4) shows that rich countries such as Japan, the UK and the USA contribute positively to declining global catch levels, which in turn prevent the stock from deteriorating further. This highlights the beneficial impacts of better fisheries management systems used in these countries. Interesting findings were found in the case of Malaysia. Unlike those of other middle-income countries, Malaysia's total catch is expected to peak in the near future. However, such declining catch levels are not immediately followed by stock recovery. For other developing countries such as China and Indonesia, we expect to see an increase in catch levels over the next two decades, leading to a steady decline in stock levels.

5. Conclusions

The objective of this study was to estimate the state of global marine fisheries and to study its relationship with economic factors. For this purpose, we used both catch levels and the estimated stock of fish as proxies for marine resource abundance. Our models employed panel datasets on 70 fishing countries for 1961-2010.

We found no evidence of the EKC hypothesis for global marine fisheries from catch and biomass stock models. However, our models show that the beneficial impacts of economic growth on global marine fisheries are likely to be achieved. Our catch model reveals the occurrence of a secondary turning point at an income level of 3,827 USD per capita after which further economic growth will lead to a decline in catch levels. In addition, our biomass model presents a secondary turning point occurring at an income level of 6,066 USD per capita after which further economic growth will lead to stock improvements. We also found that population density places constant pressure on resource use by increasing catch levels or reducing stock sizes.

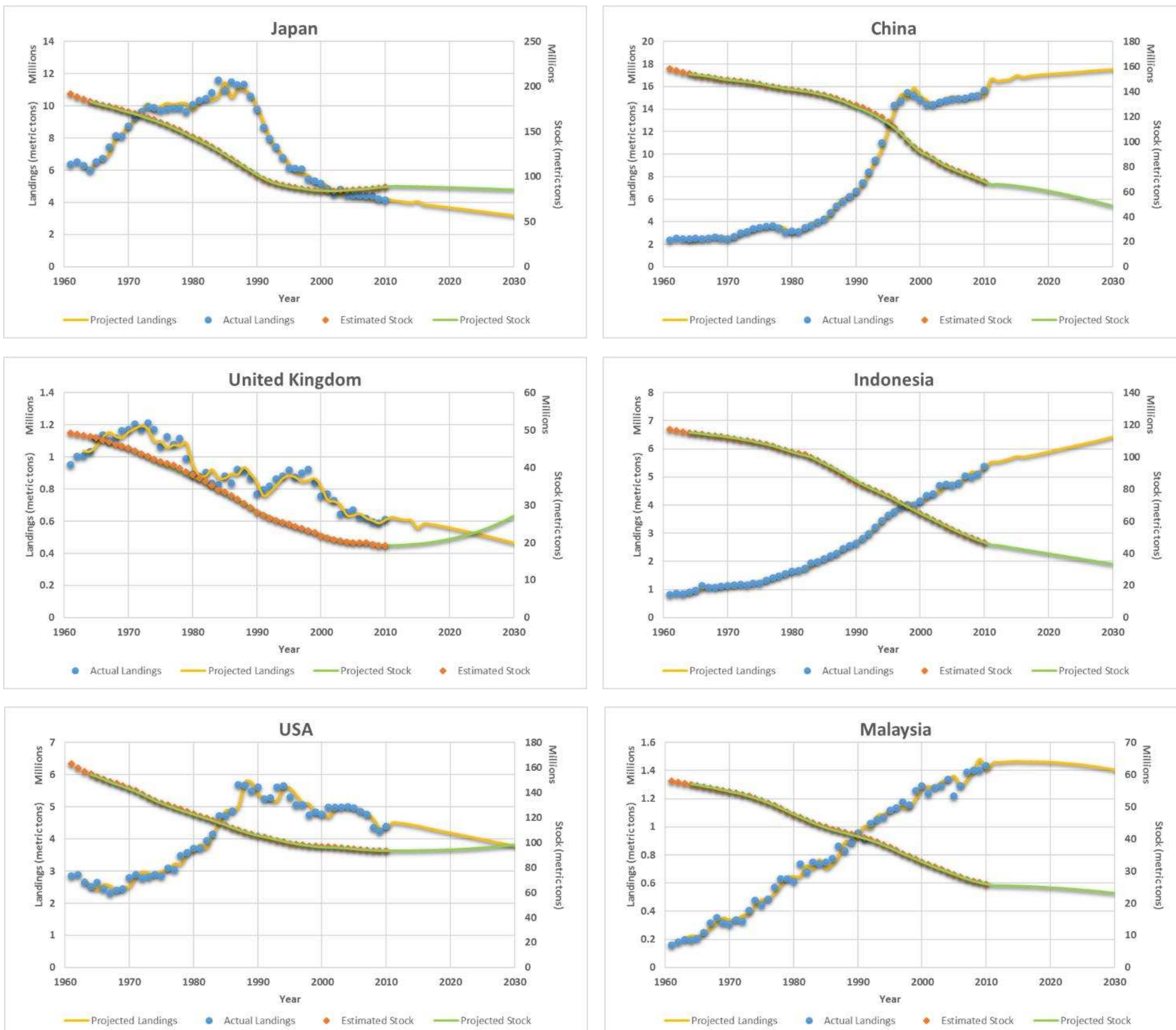

Figure 4. Projection of landings and stocks for the examined countries

Our models forecast that over the next two decades, global catch levels should decline alongside economic and population growth. We also expect to find a slight decline in stock levels followed indications of stock recovery. However, our models do not dismiss the need for more stringent environmental regulations and for the use of better fisheries management practices. The higher secondary turning point and the small value of the lagged error-correction term of the biomass model suggest that current quota-based management approaches that attempt to limit the volume of catch might help mitigate pressures on the environment while preventing stock depletion. However, stock recovery is unlikely to be observed over the short term.

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References

Acheson, J., Apollonio, S., Wilson, J., 2015. Individual transferable quotas and conservation: a critical assessment. Ecology and Society 20.

Agnew, D.J., Gutiérrez, N.L., Butterworth, D.S., 2013. Fish catch data: Less than what meets the eye. Marine Policy 42, 268-269.

Al-mulali, U., Weng-Wai, C., Sheau-Ting, L., Mohammed, A.H., 2015. Investigating the environmental Kuznets curve (EKC) hypothesis by utilizing the ecological footprint as an indicator of environmental degradation. Ecological Indicators 48, 315-323.

Bölük, G., Mert, M., 2015. The renewable energy, growth and environmental Kuznets curve in Turkey: An ARDL approach. Renewable and Sustainable Energy Reviews 52, 587-595.

Branch, T.A., Jensen, O.P., Ricard, D., Ye, Y., Hilborn, R., 2011. Contrasting global trends in marine fishery status obtained from catches and from stock assessments. Conservation Biology 25, 777-786.

Caviglia-Harris, J.L., Chambers, D., Kahn, J.R., 2009. Taking the "U" out of Kuznets. Ecological Economics 68, 1149-1159.

Costello, C., Gaines, S.D., Lynham, J., 2008. Can catch shares prevent fisheries collapse? Science 321, 1678-1681.

De Bruyn, S.M., van den Bergh, J.C., Opschoor, J.B., 1998. Economic growth and emissions: reconsidering the empirical basis of environmental Kuznets curves. Ecological Economics 25, 161-175.

Ewers, R.M., 2006. Interaction effects between economic development and forest cover determine deforestation rates. Global Environmental Change 16, 161-169.

Froese, R., Kesner-Reyes, K., 2002. Impact of fishing on the abundance of marine species. ICES Council Meeting Report CM.

Froese, R., Zeller, D., Kleisner, K., Pauly, D., 2012. What catch data can tell us about the status of global fisheries. Marine biology 159, 1283-1292.

Gephart, J.A., Deutsch, L., Pace, M.L., Troell, M., Seekell, D.A., 2017. Shocks to fish production: Identification, trends, and consequences. Global Environmental Change 42, 24-32.

Grossman, G.M., Krueger, A.B., 1991. Environmental impacts of a North American free trade agreement. National Bureau of Economic Research.

Halkos, G., Managi, S., Tsilika, K., 2017. Evaluating a continent-wise situation for capital data. Economic Analysis and Policy.

Halpern, B.S., Longo, C., Hardy, D., McLeod, K.L., Samhouri, J.F., Katona, S.K., Kleisner, K., Lester, S.E., O'Leary, J., Ranelletti, M., Rosenberg, A.A., Scarborough, C., Selig, E.R., Best, B.D., Brumbaugh, D.R., Chapin, F.S., Crowder, L.B., Daly, K.L., Doney, S.C., Elfes, C., Fogarty, M.J., Gaines, S.D., Jacobsen, K.I., Karrer, L.B., Leslie, H.M., Neeley, E., Pauly, D., Polasky, S., Ris, B., St Martin, K., Stone, G.S., Sumaila, U.R., Zeller, D., 2012. An index to assess the health and benefits of the global ocean. Nature 488, 615-620.

Hilborn, R., 2007. Reinterpreting the state of fisheries and their management. Ecosystems 10, 1362-1369.

Hutchings, J.A., 2000. Collapse and recovery of marine fishes. Nature 406, 882-885.

Jackson, J.B., Kirby, M.X., Berger, W.H., Bjorndal, K.A., Botsford, L.W., Bourque, B.J., Bradbury, R.H., Cooke, R., Erlandson, J., Estes, J.A., Hughes, T.P., Kidwell, S., Lange, C.B., Lenihan, H.S., Pandolfi, J.M., Peterson, C.H., Steneck, R.S., Tegner, M.J., Warner, R.R., 2001. Historical overfishing and the recent collapse of coastal ecosystems. Science 293, 629-637.

Jalil, A., Mahmud, S.F., 2009. Environment Kuznets curve for CO2 emissions: A cointegration analysis for China. Energy Policy 37, 5167-5172.

Kleisner, K., Zeller, D., Froese, R., Pauly, D., 2013. Using global catch data for inferences on the world's marine fisheries. Fish and Fisheries 14, 293-311.

Komen, M.H., Gerking, S., Folmer, H., 1997. Income and environmental R&D: empirical evidence from OECD countries. Environment and Development Economics 2, 505-515.

Levin, A., Lin, C.-F., Chu, C.-S.J., 2002. Unit root tests in panel data: asymptotic and finite-sample properties. Journal of econometrics 108, 1-24.

Liao, H., Cao, H.-S., 2013. How does carbon dioxide emission change with the economic development? Statistical experiences from 132 countries. Global Environmental Change 23, 1073-1082.

List, J.A., Gallet, C.A., 1999. The environmental Kuznets curve: does one size fit all? Ecological Economics 31, 409-423.

Managi, S., Hibiki, A., Tsurumi, T., 2009. Does trade openness improve environmental quality? Journal of environmental economics and management 58, 346-363.

Martell, S., Froese, R., 2013. A simple method for estimating MSY from catch and resilience. Fish and Fisheries 14, 504-514.

Merino, G., Barange, M., Blanchard, J.L., Harle, J., Holmes, R., Allen, I., Allison, E.H., Badjeck, M.C., Dulvy, N.K., Holt, J., Jennings, S., Mullon, C., Rodwell, L.D., 2012. Can marine fisheries and aquaculture meet fish demand from a growing human population in a changing climate? Global Environmental Change 22, 795-806.

Murawski, S., Methot, R., Tromble, G., 2007. Biodiversity loss in the ocean: how bad is it? Science 316, 1281-1284.

Myers, R.A., Worm, B., 2003. Rapid worldwide depletion of predatory fish communities. Nature 423, 280-283.

Nguyen Van, P., Azomahou, T., 2007. Nonlinearities and heterogeneity in environmental quality: An empirical analysis of deforestation. Journal of Development Economics 84, 291-309.

Panayotou, T., 1993. Empirical tests and policy analysis of environmental degradation at different stages of economic development. International Labour Organization.

Pauly, D., Alder, J., Booth, S., Cheung, W., Christensen, V., Close, C., Sumaila, U., Swartz, W., Tavakolie, A., Watson, R., 2008. Fisheries in large marine ecosystems: descriptions and diagnoses. The UNEP large marine ecosystem report: a perspective on changing conditions in LMEs of the World's Regional Seas. UNEP Regional Seas Reports and Studies, 23-40.

Pauly, D., Christensen, V., Dalsgaard, J., Froese, R., Torres, F., 1998. Fishing down marine food webs. Science 279, 860-863.

Pauly, D., Christensen, V., Guénette, S., Pitcher, T.J., Sumaila, U.R., Walters, C.J., Watson, R., Zeller, D., 2002. Towards sustainability in world fisheries. Nature 418, 689-695.

Pauly, D., Hilborn, R., Branch, T.A., 2013. Fisheries: does catch reflect abundance? Nature 494, 303-306.

Pauly, D., Palomares, M.-L., 2005. Fishing down marine food web: it is far more pervasive than we thought. Bulletin of Marine Science 76, 197-212.

Pauly, D., Zeller, D., 2015. Sea Around Us concepts, design and data. Springer.

Pesaran, M.H., Shin, Y., Smith, R.P., 1999. Pooled mean group estimation of dynamic heterogeneous panels. Journal of the American Statistical Association 94, 621-634.

Pontecorvo, G., Schrank, W.E., 2012. The expansion, limit and decline of the global marine fish catch. Marine Policy 36, 1178-1181.

Ricard, D., Minto, C., Jensen, O.P., Baum, J.K., 2012. Examining the knowledge base and status of commercially exploited marine species with the RAM Legacy Stock Assessment Database. Fish and Fisheries 13, 380-398.

Schaefer, M.B., 1954. Some aspects of the dynamics of populations important to the management of the commercial marine fisheries. Inter-American Tropical Tuna Commission Bulletin 1, 23-56.

Sinha, A., Bhattacharya, J., 2017. Estimation of environmental Kuznets curve for SO2 emission: A case of Indian cities. Ecological Indicators 72, 881-894.

Soliman, A., 2014. Individual transferable quotas in world fisheries: Addressing legal and rights-based issues. Ocean & Coastal Management 87, 102-113.

Srinivasan, U.T., Cheung, W.W., Watson, R., Sumaila, U.R., 2010. Food security implications of global marine catch losses due to overfishing. Journal of Bioeconomics 12, 183-200.

Sugiawan, Y., Managi, S., 2016. The environmental Kuznets curve in Indonesia: Exploring the potential of renewable energy. Energy Policy 98, 187-198.

Tamaki, T., Shin, K.J., Nakamura, H., Fujii, H., Managi, S., 2017. Shadow prices and production inefficiency of mineral resources. Economic Analysis and Policy.

Tsurumi, T., Managi, S., 2010. Decomposition of the environmental Kuznets curve: scale, technique, and composition effects. Environmental Economics and Policy Studies 11, 19-36.

Worm, B., Barbier, E.B., Beaumont, N., Duffy, J.E., Folke, C., Halpern, B.S., Jackson, J.B., Lotze, H.K., Micheli, F., Palumbi, S.R., 2006. Impacts of biodiversity loss on ocean ecosystem services. science 314, 787-790.

Worm, B., Barbier, E.B., Beaumont, N., Duffy, J.E., Folke, C., Halpern, B.S., Jackson, J.B., Lotze, H.K., Micheli, F., Palumbi, S.R., 2007. Response to comments on "Impacts of biodiversity loss on ocean ecosystem services". Science 316, 1285d-1285d.

Zeller, D., Cheung, W., Close, C., Pauly, D., 2009. Trends in global marine fisheries–a critical view. Fisheries, trade and development. Royal Swedish Academy of Agriculture and Forestry, Stockholm, 87-107.

Zeller, D., Pauly, D., 2005. Good news, bad news: global fisheries discards are declining, but so are total catches. Fish and Fisheries 6, 156-159.

Appendix A. Estimated Stock

Table A1. Estimated Biomass

x 10^6 *tons*

No	Country	No. of Species	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
1	Albania	9	0.20	0.20	0.19	0.19	0.19	0.18	0.18	0.18	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.16	0.16	0.16	0.16	0.15	0.15	0.14	0.14	0.14	0.13	0.13	0.12	0.12	0.12	0.11
2	Algeria	185	5.12	4.53	4.18	3.94	3.78	3.66	3.57	3.50	3.44	3.40	3.37	3.33	3.30	3.29	3.28	3.28	3.27	3.27	3.26	3.26	3.25	3.25	3.25	3.24	3.23	3.21	3.19	3.18	3.16	3.15	3.13
3	American Samoa	96	0.09	0.09	0.08	0.08	0.08	0.08	0.08	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.06	0.07	0.06	0.06	0.06	0.06	0.06
4	Angola	80	13.18	12.17	11.50	11.06	10.70	10.41	10.11	9.65	9.26	9.04	8.84	8.69	8.54	8.38	8.25	8.00	7.86	7.65	7.47	7.29	6.99	6.77	6.60	6.14	5.82	5.55	5.57	5.66	5.73	5.79	5.86
5	Antigua and Barbuda	32	0.10	0.09	0.08	0.08	0.07	0.07	0.07	0.07	0.07	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
6	Argentina	61	34.28	32.29	30.93	29.94	29.18	28.58	28.10	27.72	27.40	27.13	26.90	26.70	26.54	26.39	26.23	26.04	25.84	25.61	25.43	25.14	24.95	24.84	24.72	24.60	24.38	24.18	24.13	23.97	23.64	23.07	22.48
7	Aruba	76	0.08	0.08	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
8	Australia	271	10.82	10.36	10.02	9.75	9.52	9.32	9.17	9.03	8.90	8.79	8.68	8.58	8.49	8.40	8.30	8.22	8.13	8.04	7.96	7.88	7.80	7.70	7.57	7.45	7.33	7.17	7.09	6.98	6.85	6.72	6.59
9	Bahamas, The	45	0.68	0.63	0.60	0.58	0.56	0.55	0.54	0.53	0.52	0.51	0.50	0.50	0.49	0.48	0.48	0.47	0.46	0.45	0.44	0.44	0.43	0.42	0.41	0.40	0.39	0.39	0.38	0.37	0.37	0.36	0.35
10	Bahrain	36	0.85	0.73	0.67	0.62	0.59	0.57	0.55	0.53	0.52	0.51	0.50	0.49	0.48	0.48	0.47	0.46	0.45	0.44	0.44	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43
11	Bangladesh	104	18.34	16.32	15.09	14.24	13.63	13.17	12.81	12.52	12.29	12.10	11.94	11.80	11.67	11.56	11.45	11.36	11.28	11.21	11.14	11.07	11.01	10.95	10.89	10.82	10.76	10.68	10.62	10.56	10.49	10.42	10.35
12	Barbados	44	0.23	0.21	0.20	0.19	0.18	0.17	0.17	0.16	0.16	0.15	0.15	0.14	0.14	0.14	0.13	0.13	0.13	0.12	0.12	0.12	0.12	0.11	0.11	0.11	0.11	0.11	0.11	0.10	0.10	0.10	0.10
13	Belgium	75	0.53	0.51	0.49	0.46	0.43	0.40	0.37	0.34	0.34	0.33	0.32	0.32	0.31	0.31	0.31	0.30	0.29	0.29	0.29	0.29	0.29	0.28	0.28	0.28	0.27	0.27	0.26	0.25	0.25	0.26	0.26
14	Belize	57	0.22	0.21	0.20	0.19	0.18	0.18	0.17	0.17	0.17	0.16	0.16	0.16	0.16	0.15	0.15	0.15	0.15	0.15	0.14	0.14	0.14	0.14	0.14	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
15	Benin	89	1.69	1.58	1.51	1.46	1.41	1.38	1.35	1.33	1.31	1.30	1.29	1.27	1.26	1.24	1.23	1.21	1.19	1.16	1.16	1.15	1.13	1.13	1.13	1.12	1.12	1.12	1.12	1.12	1.12	1.11	1.11
16	Bermuda	56	0.04	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
17	Bosnia and Herzegovina	32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
18	Brazil	260	30.21	28.00	26.61	25.60	24.87	24.27	23.77	23.35	23.01	22.70	22.37	22.04	21.73	21.28	20.84	20.52	20.23	19.90	19.50	19.17	18.89	18.57	18.20	17.74	17.23	16.83	16.49	16.28	15.92	15.47	14.99
19	Brunei Darussalam	54	0.32	0.28	0.26	0.25	0.24	0.24	0.23	0.23	0.22	0.22	0.22	0.22	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
20	Bulgaria	15	0.43	0.41	0.39	0.37	0.36	0.34	0.33	0.33	0.32	0.31	0.31	0.30	0.29	0.29	0.28	0.28	0.28	0.27	0.27	0.27	0.27	0.26	0.26	0.26	0.26	0.25	0.25	0.24	0.23	0.23	0.22
21	Cabo Verde	39	0.54	0.50	0.47	0.45	0.44	0.42	0.41	0.40	0.39	0.39	0.38	0.38	0.37	0.37	0.36	0.36	0.35	0.34	0.34	0.33	0.32	0.32	0.31	0.31	0.31	0.31	0.30	0.30	0.29	0.29	0.29
22	Cambodia	105	31.72	30.13	28.98	28.12	27.44	26.91	26.48	26.13	25.84	25.61	25.41	25.25	25.10	24.98	24.88	24.80	24.68	24.55	24.42	24.25	24.06	23.84	23.61	23.36	23.12	22.91	22.72	22.51	22.15	21.81	21.53
23	Cameroon	60	2.48	2.32	2.21	2.13	2.07	2.02	1.98	1.94	1.90	1.87	1.85	1.83	1.82	1.80	1.78	1.77	1.76	1.75	1.75	1.74	1.73	1.71	1.68	1.65	1.60	1.56	1.52	1.48	1.44	1.40	1.37
24	Canada	172	199.38	192.85	187.49	182.05	177.04	171.55	166.47	161.47	156.70	151.84	146.67	141.14	134.88	129.00	122.72	116.44	109.80	103.67	97.65	91.11	85.79	81.45	77.34	73.62	69.97	67.42	65.50	64.43	65.00	66.36	67.68
25	Cayman Islands	18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
26	Chile	86	112.66	109.01	106.46	104.51	102.98	101.75	100.69	99.84	99.13	98.54	98.01	97.37	96.74	96.22	94.76	92.64	92.20	91.05	90.38	89.41	88.89	87.94	87.12	87.12	87.28	86.09	85.36	84.66	83.28	80.93	79.91
27	China	185	219.92	203.34	192.49	184.67	178.89	174.18	170.35	166.92	164.20	161.89	159.88	158.17	156.71	155.36	154.20	153.16	152.19	151.31	150.59	149.84	149.17	148.64	148.06	147.33	146.55	145.65	144.60	143.68	142.72	141.94	141.31
28	Colombia	74	3.23	3.17	3.13	3.09	3.05	3.02	3.00	2.98	2.95	2.92	2.88	2.84	2.78	2.69	2.57	2.52	2.47	2.39	2.29	2.22	2.20	2.13	2.09	2.00	1.84	1.75	1.65	1.65	1.60	1.61	1.63
29	Comoros	21	0.43	0.39	0.37	0.35	0.34	0.33	0.33	0.32	0.32	0.31	0.31	0.31	0.30	0.30	0.30	0.30	0.30	0.30	0.29	0.29	0.29	0.29	0.29	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28
30	Congo, Dem. Rep.	41	0.50	0.46	0.43	0.41	0.40	0.39	0.38	0.37	0.37	0.36	0.35	0.35	0.34	0.34	0.33	0.33	0.32	0.32	0.31	0.31	0.30	0.29	0.29	0.28	0.27	0.26	0.25	0.24	0.24	0.23	0.23
31	Congo, Rep.	56	2.02	1.96	1.92	1.88	1.85	1.83	1.80	1.78	1.76	1.73	1.70	1.68	1.66	1.63	1.61	1.57	1.52	1.47	1.46	1.44	1.42	1.40	1.37	1.33	1.29	1.23	1.18	1.12	1.06	1.02	0.97
32	Costa Rica	81	2.68	2.60	2.55	2.50	2.47	2.44	2.42	2.40	2.39	2.37	2.35	2.32	2.29	2.26	2.23	2.18	2.14	2.11	2.08	2.03	2.01	1.98	1.91	1.84	1.74	1.64	1.62	1.60	1.60	1.59	1.57
33	Côte d'Ivoire	139	3.24	3.13	3.05	2.99	2.94	2.89	2.85	2.81	2.77	2.74	2.70	2.66	2.61	2.57	2.52	2.48	2.44	2.39	2.35	2.31	2.28	2.24	2.21	2.19	2.17	2.16	2.15	2.13	2.10	2.07	2.04
34	Croatia	57	1.83	1.72	1.64	1.58	1.52	1.48	1.45	1.41	1.38	1.36	1.34	1.32	1.30	1.29	1.27	1.25	1.24	1.22	1.21	1.19	1.18	1.18	1.16	1.15	1.14	1.13	1.12	1.11	1.10	1.08	1.07
35	Cuba	55	1.70	1.64	1.60	1.56	1.53	1.51	1.48	1.46	1.44	1.42	1.40	1.38	1.36	1.34	1.32	1.30	1.27	1.25	1.23	1.21	1.19	1.17	1.14	1.11	1.08	1.04	1.01	0.98	0.95	0.92	0.90
36	Curaçao	28	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.04
37	Denmark	135	44.06	42.98	42.06	41.27	40.60	39.82	39.13	38.53	37.91	37.30	36.75	36.26	35.72	35.18	34.58	33.91	33.33	32.81	32.25	31.57	30.95	30.39	29.80	29.27	28.68	28.09	27.34	26.55	25.94	25.33	24.81
38	Djibouti	10	0.04	0.04	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
39	Dominica	37	0.06	0.05	0.05	0.05	0.05	0.05	0.05	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
40	Dominican Republic	92	1.74	1.53	1.40	1.31	1.24	1.19	1.15	1.12	1.09	1.07	1.05	1.03	1.02	1.00	0.99	0.97	0.96	0.95	0.94	0.93	0.92	0.92	0.91	0.89	0.89	0.88	0.87	0.87	0.87	0.87	0.86

x 10^6 tons

No	Country	No. of Species	Year																													
			1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
1	Albania	9	0.11	0.11	0.10	0.10	0.10	0.09	0.09	0.08	0.07	0.07	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
2	Algeria	185	3.11	3.08	3.04	3.00	2.97	2.92	2.89	2.83	2.76	2.70	2.66	2.64	2.59	2.54	2.45	2.41	2.40	2.38	2.36	2.33	2.28	2.21	2.14	2.06	2.01	1.94	1.84	1.75	1.66	1.59
3	American Samoa	96	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.07	0.07	0.06	0.06	0.06	0.06	0.06	0.05	0.06	0.05	0.04	0.04	0.04	0.04	0.04	0.03	0.03	0.03
4	Angola	80	5.97	6.01	6.08	6.16	6.28	6.36	6.45	6.56	6.60	6.63	6.59	6.59	6.60	6.62	6.59	6.57	6.59	6.55	6.48	6.40	6.29	6.19	6.18	6.18	6.20	6.17	6.12	6.05	6.00	5.95
5	Antigua and Barbuda	32	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
6	Argentina	61	22.28	22.15	21.84	21.61	21.55	21.37	21.18	20.89	20.50	20.11	19.65	19.05	18.32	17.38	16.69	15.77	14.81	13.73	12.99	12.39	12.02	11.62	11.24	10.91	10.56	10.26	9.61	8.98	8.16	7.69
7	Aruba	76	0.06	0.06	0.05	0.05	0.05	0.05	0.05	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.03	0.03	0.03	0.02	0.02	0.02	0.02	0.02	0.02
8	Australia	271	6.50	6.34	6.18	6.02	5.88	5.72	5.58	5.40	5.19	5.00	4.77	4.50	4.32	4.14	4.02	3.88	3.76	3.62	3.49	3.36	3.26	3.14	3.08	2.99	2.91	2.81	2.71	2.70	2.69	2.68
9	Bahamas, The	45	0.34	0.34	0.33	0.32	0.31	0.29	0.29	0.29	0.28	0.28	0.28	0.27	0.27	0.26	0.26	0.26	0.25	0.25	0.24	0.24	0.23	0.23	0.23	0.22	0.22	0.21	0.21	0.21	0.21	0.21
10	Bahrain	36	0.43	0.42	0.42	0.42	0.41	0.40	0.40	0.39	0.39	0.38	0.38	0.38	0.37	0.37	0.36	0.35	0.34	0.33	0.33	0.32	0.32	0.32	0.32	0.32	0.31	0.31	0.31	0.31	0.30	0.29
11	Bangladesh	104	10.28	10.22	10.15	10.08	10.01	9.92	9.82	9.70	9.59	9.48	9.37	9.26	9.14	9.01	8.89	8.76	8.63	8.51	8.39	8.26	8.15	8.02	7.90	7.77	7.57	7.40	7.25	7.11	6.97	6.78
12	Barbados	44	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.09	0.09	0.09	0.09	0.09	0.10	0.09	0.10	0.09	0.10	0.09	0.09	0.10	0.10	0.10	0.10	0.10	0.10
13	Belgium	75	0.26	0.25	0.24	0.24	0.24	0.24	0.25	0.25	0.26	0.26	0.27	0.28	0.28	0.29	0.29	0.30	0.31	0.32	0.33	0.33	0.34	0.35	0.36	0.36	0.37	0.38	0.39	0.39	0.40	0.41
14	Belize	57	0.13	0.12	0.12	0.12	0.12	0.12	0.12	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
15	Benin	89	1.10	1.10	1.09	1.07	1.06	1.05	1.03	1.01	0.98	0.95	0.91	0.87	0.84	0.81	0.78	0.76	0.73	0.71	0.69	0.67	0.64	0.62	0.59	0.56	0.53	0.49	0.47	0.45	0.44	0.42
16	Bermuda	56	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
17	Bosnia and Herzegovina	32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
18	Brazil	260	14.68	14.39	14.05	13.62	13.09	12.58	12.12	11.64	11.30	11.00	10.95	10.86	10.79	10.81	10.79	10.80	10.83	10.77	10.75	10.77	10.75	10.64	10.53	10.49	10.43	10.37	10.29	10.18	10.07	9.93
19	Brunei Darussalam	54	0.20	0.20	0.20	0.20	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.18	0.18	0.18	0.17	0.17	0.16	0.16	0.16	0.16	0.16	0.15	0.15	0.14	0.14	0.13	0.13	0.12	0.12	0.11
20	Bulgaria	15	0.20	0.19	0.18	0.17	0.17	0.16	0.15	0.15	0.15	0.15	0.16	0.16	0.17	0.18	0.18	0.19	0.19	0.19	0.20	0.20	0.20	0.21	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
21	Cabo Verde	39	0.29	0.28	0.28	0.27	0.27	0.26	0.26	0.26	0.26	0.25	0.25	0.25	0.25	0.25	0.24	0.23	0.23	0.22	0.21	0.20	0.19	0.18	0.18	0.18	0.17	0.15	0.15	0.14	0.14	0.13
22	Cambodia	105	21.28	20.94	20.51	20.03	19.60	19.10	18.53	17.87	17.36	16.91	16.47	16.07	15.56	15.09	14.57	14.04	13.39	12.73	11.98	11.21	10.44	9.79	9.09	8.39	7.63	6.85	6.17	5.59	5.46	5.31
23	Cameroon	60	1.34	1.32	1.30	1.29	1.27	1.26	1.25	1.24	1.23	1.21	1.18	1.14	1.12	1.09	1.06	1.02	0.99	0.96	0.92	0.88	0.84	0.80	0.77	0.73	0.69	0.67	0.66	0.65	0.65	0.64
24	Canada	172	69.26	70.97	72.82	74.75	76.77	78.59	80.16	81.82	83.50	85.18	86.88	89.04	91.60	94.38	96.93	100.31	103.59	106.80	110.12	113.41	116.63	119.76	122.81	125.75	128.59	131.45	134.25	137.01	139.74	142.11
25	Cayman Islands	18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
26	Chile	86	78.70	77.07	73.64	71.36	69.20	66.89	63.84	61.12	58.71	55.30	52.26	49.08	46.32	44.71	42.03	39.36	36.73	35.20	35.10	33.81	33.19	32.53	31.83	31.02	28.84	27.35	26.15	25.43	24.89	24.13
27	China	185	140.78	140.23	139.26	138.35	137.13	135.65	134.28	132.43	130.44	128.96	127.01	124.95	122.07	119.55	115.98	111.59	106.18	100.62	95.56	92.32	89.54	86.09	82.85	80.32	78.06	76.03	74.21	72.28	70.17	68.05
28	Colombia	74	1.63	1.61	1.59	1.60	1.57	1.48	1.46	1.44	1.40	1.37	1.32	1.25	1.12	1.09	1.09	1.08	1.05	1.03	1.01	1.03	1.02	1.02	1.03	1.03	1.05	1.07	1.09	1.08	1.09	1.10
29	Comoros	21	0.28	0.28	0.28	0.27	0.27	0.26	0.26	0.26	0.26	0.25	0.24	0.24	0.23	0.23	0.22	0.22	0.21	0.20	0.19	0.18	0.18	0.17	0.16	0.15	0.14	0.14	0.13	0.13	0.12	0.12
30	Congo, Dem. Rep.	41	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.22	0.22	0.22	0.22	0.22	0.21	0.21	0.21	0.21	0.21	0.21	0.21
31	Congo, Rep.	56	0.91	0.86	0.82	0.77	0.74	0.72	0.71	0.69	0.69	0.68	0.68	0.69	0.70	0.71	0.71	0.72	0.73	0.74	0.75	0.76	0.76	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.76	0.76
32	Costa Rica	81	1.55	1.51	1.48	1.48	1.44	1.34	1.23	1.17	1.13	1.09	1.07	1.07	1.07	1.05	1.02	1.00	0.97	0.96	0.95	0.94	0.92	0.92	0.88	0.84	0.82	0.80	0.78	0.78	0.79	0.79
33	Côte d'Ivoire	139	2.03	2.02	2.01	2.00	2.00	1.99	1.98	1.96	1.96	1.94	1.92	1.90	1.86	1.82	1.80	1.78	1.76	1.73	1.72	1.69	1.67	1.66	1.65	1.65	1.65	1.65	1.67	1.68	1.69	1.70
34	Croatia	57	1.05	1.03	1.00	0.97	0.94	0.91	0.88	0.84	0.81	0.79	0.77	0.77	0.76	0.74	0.74	0.74	0.75	0.76	0.76	0.78	0.79	0.80	0.82	0.82	0.82	0.82	0.81	0.81	0.81	0.79
35	Cuba	55	0.87	0.85	0.83	0.80	0.77	0.74	0.71	0.68	0.66	0.63	0.61	0.60	0.59	0.58	0.57	0.56	0.55	0.53	0.52	0.51	0.49	0.49	0.49	0.49	0.49	0.50	0.51	0.51	0.52	0.53
36	Curaçao	28	0.04	0.04	0.04	0.03	0.03	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
37	Denmark	135	24.16	23.51	22.91	22.39	21.81	21.31	20.71	20.37	19.66	19.02	18.71	18.19	17.47	17.12	16.50	15.77	15.44	15.00	14.70	14.48	14.19	13.80	13.39	13.39	13.32	13.35	13.47	13.75	14.00	14.16
38	Djibouti	10	0.03	0.03	0.03	0.03	0.03	0.03	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
39	Dominica	37	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
40	Dominican Republic	92	0.85	0.84	0.82	0.80	0.78	0.77	0.75	0.73	0.71	0.70	0.68	0.68	0.65	0.63	0.62	0.61	0.61	0.60	0.61	0.60	0.60	0.59	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.57

x 10^6 tons

No	Country	No. of Species	Year																														
			1950	*1951*	*1952*	*1953*	*1954*	*1955*	*1956*	*1957*	*1958*	*1959*	*1960*	*1961*	*1962*	*1963*	*1964*	*1965*	*1966*	*1967*	*1968*	*1969*	*1970*	*1971*	*1972*	*1973*	*1974*	*1975*	*1976*	*1977*	*1978*	*1979*	*1980*
41	Ecuador	69	20.00	19.49	19.16	18.93	18.75	18.61	18.50	18.40	18.32	18.26	18.19	18.14	18.09	18.04	17.96	17.91	17.86	17.81	17.76	17.69	17.62	17.54	17.44	17.31	17.11	16.89	16.62	16.14	15.36	14.25	13.23
42	Egypt, Arab Rep.	73	2.84	2.62	2.48	2.37	2.30	2.23	2.19	2.14	2.10	2.05	2.00	1.96	1.92	1.88	1.83	1.78	1.75	1.74	1.73	1.72	1.72	1.72	1.71	1.70	1.71	1.70	1.69	1.68	1.66	1.65	1.62
43	El Salvador	62	2.31	2.27	2.24	2.22	2.20	2.18	2.17	2.16	2.13	2.10	2.07	1.98	1.88	1.80	1.73	1.65	1.58	1.50	1.45	1.38	1.34	1.30	1.25	1.22	1.15	1.10	1.07	1.04	1.04	0.98	0.95
44	Equatorial Guinea	80	1.34	1.28	1.24	1.21	1.19	1.17	1.15	1.14	1.12	1.11	1.10	1.09	1.08	1.08	1.07	1.06	1.05	1.05	1.04	1.02	1.00	0.99	0.97	0.94	0.92	0.88	0.84	0.79	0.76	0.74	0.74
45	Eritrea	52	0.53	0.50	0.48	0.46	0.44	0.42	0.40	0.38	0.37	0.36	0.36	0.36	0.35	0.34	0.34	0.34	0.32	0.31	0.30	0.29	0.28	0.27	0.25	0.25	0.25	0.25	0.26	0.26	0.27	0.28	0.29
46	Estonia	47	2.57	2.32	2.16	2.04	1.95	1.88	1.82	1.77	1.73	1.70	1.67	1.65	1.63	1.61	1.59	1.57	1.55	1.53	1.52	1.49	1.47	1.45	1.43	1.40	1.38	1.35	1.33	1.31	1.30	1.28	1.27
47	Faroe Islands	90	14.99	14.07	13.37	12.80	12.28	11.75	11.16	10.55	10.31	10.33	10.32	10.40	10.55	10.72	10.86	10.89	10.49	10.14	10.02	9.96	9.97	9.91	9.94	9.99	10.07	10.22	10.32	10.40	10.50	10.53	10.59
48	Fiji	52	1.57	1.52	1.47	1.44	1.41	1.38	1.36	1.33	1.32	1.30	1.28	1.26	1.24	1.23	1.21	1.20	1.18	1.17	1.15	1.14	1.12	1.11	1.10	1.08	1.07	1.06	1.04	1.03	1.02	1.00	0.98
49	Finland	46	3.34	2.94	2.70	2.53	2.40	2.30	2.22	2.16	2.11	2.08	2.04	2.01	1.99	1.97	1.93	1.92	1.90	1.88	1.87	1.84	1.82	1.80	1.78	1.76	1.73	1.71	1.69	1.67	1.64	1.62	1.60
50	France	294	11.35	10.54	9.99	9.60	9.30	9.08	8.89	8.73	8.58	8.44	8.34	8.22	8.08	7.97	7.88	7.80	7.72	7.64	7.54	7.43	7.34	7.28	7.22	7.09	7.03	6.90	6.76	6.56	6.39	6.21	6.06
51	French Polynesia	33	0.64	0.60	0.58	0.56	0.55	0.54	0.53	0.53	0.52	0.51	0.49	0.46	0.43	0.43	0.43	0.43	0.43	0.43	0.42	0.42	0.42	0.41	0.40	0.39	0.39	0.38	0.37	0.36	0.35	0.26	0.25
52	Gabon	79	3.58	3.44	3.34	3.26	3.20	3.15	3.11	3.07	3.04	3.02	2.99	2.96	2.94	2.91	2.89	2.86	2.83	2.79	2.74	2.69	2.63	2.60	2.55	2.51	2.46	2.42	2.38	2.32	2.26	2.15	2.05
53	Gambia, The	199	4.88	4.63	4.46	4.34	4.25	4.18	4.12	4.07	4.03	3.99	3.97	3.95	3.93	3.91	3.88	3.86	3.82	3.79	3.76	3.74	3.71	3.62	3.43	3.26	3.16	3.11	3.05	2.99	2.95	2.91	2.88
54	Georgia	37	2.78	2.40	2.20	2.06	1.97	1.91	1.86	1.82	1.79	1.77	1.75	1.73	1.72	1.70	1.69	1.68	1.66	1.65	1.63	1.61	1.59	1.57	1.55	1.52	1.49	1.45	1.41	1.36	1.32	1.26	1.21
55	Germany	118	4.80	4.64	4.51	4.39	4.27	4.16	4.05	3.97	3.88	3.80	3.74	3.70	3.64	3.59	3.51	3.44	3.39	3.31	3.25	3.17	3.12	3.05	3.01	2.96	2.89	2.83	2.78	2.74	2.71	2.71	2.71
56	Ghana	87	13.04	12.29	11.78	11.41	11.11	10.89	10.71	10.54	10.38	10.25	10.13	10.04	9.95	9.86	9.76	9.64	9.53	9.41	9.29	9.20	9.04	8.82	8.57	8.27	8.15	7.99	7.78	7.62	7.43	7.27	7.14
57	Greece	68	5.88	5.46	5.18	4.97	4.81	4.67	4.56	4.47	4.38	4.30	4.23	4.16	4.09	4.04	4.00	3.95	3.92	3.88	3.85	3.82	3.80	3.77	3.75	3.73	3.70	3.67	3.63	3.59	3.55	3.51	3.47
58	Greenland	90	16.17	15.39	14.83	14.30	13.90	13.51	13.15	12.85	12.57	12.21	11.90	11.63	11.32	10.97	10.65	10.34	9.97	9.64	9.32	8.99	8.78	8.66	8.50	8.32	8.20	8.05	7.94	7.85	7.79	7.79	7.75
59	Grenada	50	0.15	0.15	0.14	0.14	0.13	0.13	0.12	0.12	0.11	0.11	0.11	0.10	0.10	0.10	0.09	0.09	0.09	0.09	0.08	0.08	0.07	0.07	0.07	0.06	0.06	0.06	0.06	0.06	0.05	0.05	0.05
60	Guam	73	0.04	0.04	0.04	0.04	0.04	0.04	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.02	0.02	0.02	0.01
61	Guatemala	84	1.17	1.09	1.04	1.00	0.98	0.95	0.94	0.92	0.91	0.90	0.89	0.88	0.85	0.84	0.83	0.82	0.81	0.80	0.79	0.77	0.77	0.76	0.75	0.74	0.73	0.71	0.69	0.69	0.67	0.66	0.65
62	Guinea	121	11.02	9.69	8.95	8.47	8.12	7.87	7.67	7.51	7.39	7.28	7.19	7.10	7.01	6.91	6.83	6.76	6.71	6.67	6.62	6.57	6.52	6.46	6.40	6.34	6.28	6.21	6.13	6.04	5.93	5.80	5.68
63	Guinea-Bissau	144	8.56	7.93	7.53	7.25	7.05	6.90	6.78	6.68	6.59	6.51	6.44	6.38	6.32	6.26	6.20	6.13	6.08	6.03	5.98	5.92	5.86	5.80	5.74	5.67	5.60	5.52	5.43	5.36	5.24	5.13	5.00
64	Guyana	57	1.43	1.35	1.29	1.24	1.21	1.18	1.16	1.14	1.12	1.11	1.10	1.08	1.07	1.06	1.05	1.04	1.03	1.02	1.01	1.00	0.99	0.98	0.97	0.95	0.94	0.93	0.92	0.91	0.89	0.87	0.86
65	Haiti	67	0.58	0.49	0.44	0.41	0.39	0.37	0.36	0.35	0.34	0.34	0.33	0.33	0.32	0.32	0.31	0.31	0.31	0.31	0.30	0.30	0.30	0.30	0.29	0.29	0.29	0.29	0.29	0.28	0.28	0.28	0.28
66	Honduras	92	0.53	0.51	0.49	0.48	0.47	0.46	0.45	0.45	0.44	0.43	0.43	0.42	0.42	0.41	0.41	0.41	0.40	0.40	0.39	0.38	0.38	0.37	0.36	0.35	0.35	0.35	0.35	0.34	0.34	0.33	0.32
67	Hong Kong SAR, China	83	0.51	0.50	0.49	0.49	0.48	0.47	0.47	0.46	0.46	0.45	0.45	0.45	0.44	0.44	0.44	0.43	0.42	0.41	0.41	0.39	0.38	0.36	0.35	0.34	0.34	0.33	0.32	0.31	0.30	0.29	0.28
68	Iceland	68	47.30	45.07	43.42	42.16	41.08	40.18	39.40	38.69	38.09	37.56	37.02	36.54	35.97	35.30	34.76	33.97	33.15	32.56	32.28	32.08	31.78	31.48	31.26	31.04	30.71	30.37	30.07	29.75	29.04	28.22	27.38
69	India	206	116.12	102.69	94.67	89.26	85.23	82.10	79.68	77.59	75.79	74.52	73.58	72.54	71.76	71.12	70.62	69.85	69.25	68.63	68.11	67.57	67.15	66.51	65.86	65.39	64.85	64.13	63.30	62.64	62.12	61.48	60.94
70	Indonesia	143	161.01	147.77	139.35	133.49	129.23	126.00	123.52	121.57	120.03	118.79	117.80	117.00	116.25	115.59	115.03	114.52	113.97	113.42	112.98	112.48	111.96	111.25	110.61	109.92	109.19	108.50	107.73	106.74	105.42	104.22	103.15
71	Iran, Islamic Rep.	132	11.25	10.48	9.92	9.48	9.14	8.85	8.62	8.41	8.24	8.08	7.95	7.82	7.71	7.61	7.52	7.43	7.35	7.27	7.19	7.13	7.06	7.01	6.96	6.91	6.87	6.83	6.78	6.72	6.66	6.60	6.55
72	Iraq	12	0.30	0.28	0.27	0.26	0.25	0.25	0.24	0.24	0.23	0.23	0.23	0.23	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.21	0.21	0.21	0.21	0.21	0.20	0.19	0.18	0.17	0.17	0.16	0.15
73	Ireland	131	14.23	13.68	13.24	12.88	12.56	12.28	12.07	11.84	11.62	11.41	11.23	11.01	10.90	10.78	10.65	10.53	10.44	10.37	10.28	10.18	10.07	9.94	9.81	9.69	9.57	9.46	9.39	9.36	9.39	9.39	9.38
74	Israel	49	0.16	0.15	0.14	0.14	0.14	0.13	0.13	0.13	0.12	0.12	0.12	0.11	0.11	0.11	0.11	0.11	0.11	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.09	0.09	0.09	0.09	0.09	0.09	0.09
75	Italy	96	24.97	23.90	23.05	22.16	21.50	20.93	20.43	19.95	19.62	19.35	19.13	18.96	18.76	18.66	18.51	18.35	18.17	17.96	17.73	17.56	17.41	17.21	17.05	16.84	16.57	16.28	15.84	15.44	15.11	14.69	14.26
76	Jamaica	62	1.58	1.48	1.41	1.35	1.31	1.27	1.24	1.22	1.19	1.17	1.15	1.14	1.12	1.11	1.09	1.08	1.07	1.05	1.04	1.03	1.02	1.00	0.99	0.98	0.97	0.96	0.94	0.93	0.92	0.91	0.89
77	Japan	159	251.82	239.16	230.31	223.55	217.91	213.23	209.03	205.37	201.65	198.30	195.06	191.98	188.74	185.81	183.20	181.47	179.45	177.72	175.93	173.88	172.16	170.10	167.90	165.63	163.12	160.45	157.53	154.48	151.24	147.64	144.29
78	Jordan	18	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
79	Kenya	45	0.48	0.45	0.42	0.41	0.39	0.38	0.37	0.36	0.36	0.35	0.34	0.34	0.33	0.33	0.32	0.32	0.31	0.31	0.30	0.30	0.29	0.28	0.28	0.27	0.27	0.26	0.25	0.25	0.24	0.24	0.23
80	Kiribati	35	4.55	4.17	3.93	3.77	3.65	3.57	3.50	3.44	3.40	3.35	3.30	3.28	3.26	3.23	3.22	3.20	3.19	3.17	3.16	3.15	3.12	3.14	3.15	3.14	3.14	3.14	3.13	3.11	3.09	3.05	3.06

x 10^6 *tons*

No	Country	No. of Species	Year																													
			1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
41	Ecuador	69	12.16	11.41	10.52	10.28	9.24	7.56	6.58	6.05	5.37	4.93	4.90	4.84	4.83	4.68	4.64	4.58	4.23	4.00	4.02	4.05	4.02	3.99	4.11	4.22	4.36	4.44	4.60	4.79	4.92	5.11
42	Egypt, Arab Rep.	73	1.60	1.59	1.58	1.57	1.55	1.53	1.52	1.51	1.48	1.45	1.41	1.38	1.36	1.31	1.29	1.27	1.24	1.21	1.16	1.09	1.06	1.03	1.01	1.00	0.99	0.97	0.95	0.91	0.86	0.83
43	El Salvador	62	0.96	0.93	0.91	0.91	0.85	0.84	0.83	0.82	0.81	0.81	0.82	0.83	0.85	0.85	0.85	0.84	0.82	0.82	0.82	0.84	0.87	0.89	0.91	0.92	0.94	0.95	0.96	0.97	1.00	1.03
44	Equatorial Guinea	80	0.71	0.67	0.64	0.62	0.61	0.59	0.58	0.57	0.56	0.56	0.55	0.55	0.54	0.55	0.54	0.54	0.53	0.53	0.52	0.52	0.52	0.52	0.52	0.53	0.54	0.55	0.55	0.56	0.56	0.57
45	Eritrea	52	0.29	0.30	0.31	0.32	0.33	0.33	0.34	0.34	0.35	0.36	0.36	0.37	0.38	0.39	0.40	0.40	0.41	0.42	0.43	0.44	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.44	0.45
46	Estonia	47	1.26	1.26	1.25	1.24	1.23	1.21	1.20	1.19	1.17	1.16	1.15	1.15	1.15	1.14	1.12	1.09	1.06	1.02	1.00	0.98	0.96	0.94	0.94	0.95	0.95	0.94	0.95	0.95	0.92	0.90
47	Faroe Islands	90	10.73	10.86	11.04	11.15	11.17	11.16	11.08	11.04	11.01	11.01	11.03	11.14	11.23	11.31	11.40	11.32	11.34	11.26	11.16	11.10	10.96	10.68	10.56	10.11	9.85	9.56	9.26	9.08	9.06	9.05
48	Fiji	52	0.97	0.96	0.96	0.95	0.95	0.94	0.94	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.94	0.95	0.95	0.96	0.96	0.95	0.95	0.95	0.96	0.97	0.98	0.98	0.99	0.98
49	Finland	46	1.58	1.58	1.57	1.55	1.53	1.52	1.50	1.49	1.47	1.46	1.45	1.45	1.43	1.41	1.37	1.33	1.30	1.25	1.21	1.17	1.14	1.12	1.12	1.14	1.15	1.14	1.14	1.12	1.10	1.08
50	France	294	5.90	5.85	5.80	5.65	5.55	5.42	5.29	5.20	5.05	4.96	4.88	4.81	4.70	4.63	4.57	4.51	4.49	4.44	4.41	4.33	4.25	4.20	4.14	4.05	3.99	3.93	3.88	3.82	3.81	3.79
51	French Polynesia	33	0.24	0.23	0.23	0.23	0.23	0.23	0.22	0.22	0.22	0.22	0.22	0.22	0.21	0.22	0.22	0.22	0.23	0.23	0.23	0.23	0.24	0.24	0.24	0.25	0.25	0.25	0.26	0.26	0.27	0.27
52	Gabon	79	1.96	1.87	1.80	1.73	1.69	1.63	1.58	1.55	1.50	1.47	1.44	1.41	1.39	1.37	1.33	1.26	1.23	1.21	1.16	1.12	1.05	1.01	0.96	0.92	0.86	0.82	0.80	0.78	0.75	0.74
53	Gambia, The	199	2.84	2.81	2.78	2.76	2.74	2.65	2.57	2.47	2.36	2.21	1.99	1.79	1.72	1.67	1.64	1.63	1.62	1.62	1.64	1.64	1.64	1.60	1.57	1.52	1.47	1.44	1.41	1.38	1.34	1.31
54	Georgia	37	1.15	1.10	1.05	1.01	0.96	0.92	0.89	0.85	0.81	0.85	0.92	1.00	1.06	1.13	1.20	1.25	1.29	1.32	1.34	1.36	1.37	1.38	1.38	1.37	1.35	1.32	1.29	1.24	1.16	1.10
55	Germany	118	2.71	2.71	2.70	2.69	2.68	2.67	2.68	2.69	2.71	2.73	2.77	2.81	2.84	2.87	2.89	2.91	2.93	2.94	2.97	2.98	3.00	3.01	3.02	3.06	3.08	3.09	3.11	3.13	3.16	3.20
56	Ghana	87	7.03	6.90	6.81	6.73	6.68	6.60	6.50	6.33	6.22	6.12	6.00	5.88	5.71	5.59	5.52	5.41	5.20	5.03	4.87	4.66	4.49	4.34	4.24	4.09	3.92	3.80	3.69	3.62	3.48	3.35
57	Greece	68	3.43	3.38	3.32	3.27	3.20	3.14	3.05	2.97	2.90	2.83	2.77	2.70	2.63	2.55	2.42	2.32	2.23	2.14	2.09	2.04	2.00	1.97	1.94	1.91	1.88	1.85	1.82	1.79	1.76	1.74
58	Greenland	90	7.71	7.77	7.84	7.90	7.97	7.85	7.82	7.80	7.83	7.78	7.75	7.80	7.79	7.73	7.68	7.79	7.91	7.94	7.99	8.03	8.06	8.03	8.00	7.97	7.99	8.02	8.04	8.08	8.12	8.20
59	Grenada	50	0.05	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
60	Guam	73	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.03	0.03	0.03	0.03
61	Guatemala	84	0.64	0.63	0.62	0.62	0.61	0.60	0.60	0.60	0.59	0.58	0.58	0.57	0.56	0.55	0.53	0.51	0.49	0.48	0.46	0.44	0.43	0.41	0.40	0.39	0.38	0.37	0.37	0.36	0.36	0.36
62	Guinea	121	5.56	5.45	5.35	5.26	5.19	5.15	5.11	5.08	5.05	5.04	4.98	4.89	4.84	4.81	4.81	4.74	4.68	4.55	4.40	4.31	4.17	4.05	3.96	3.92	3.91	3.89	3.81	3.72	3.64	3.51
63	Guinea-Bissau	144	4.78	4.61	4.41	4.23	4.12	3.98	3.79	3.58	3.41	3.18	3.09	3.01	2.99	2.97	2.95	2.92	2.88	2.84	2.81	2.77	2.69	2.63	2.58	2.53	2.49	2.45	2.44	2.43	2.44	2.47
64	Guyana	57	0.85	0.84	0.83	0.82	0.81	0.80	0.79	0.79	0.78	0.77	0.76	0.75	0.75	0.73	0.72	0.70	0.66	0.62	0.59	0.55	0.53	0.50	0.49	0.46	0.44	0.43	0.41	0.40	0.39	0.38
65	Haiti	67	0.28	0.28	0.28	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.26	0.26	0.26	0.26	0.25	0.25	0.25	0.24	0.24	0.23	0.23	0.22	0.22	0.21	0.21	0.20	0.19	0.19
66	Honduras	92	0.32	0.31	0.31	0.30	0.30	0.29	0.27	0.26	0.25	0.25	0.25	0.24	0.23	0.23	0.22	0.21	0.20	0.19	0.19	0.18	0.17	0.17	0.16	0.15	0.14	0.14	0.14	0.14	0.14	0.14
67	Hong Kong SAR, China	83	0.27	0.26	0.25	0.25	0.24	0.23	0.22	0.21	0.20	0.18	0.18	0.17	0.16	0.15	0.14	0.14	0.13	0.12	0.12	0.13	0.13	0.13	0.14	0.14	0.14	0.15	0.15	0.15	0.16	0.16
68	Iceland	68	26.72	26.18	26.31	26.40	25.78	25.04	24.29	23.58	22.77	22.22	21.68	21.65	21.06	20.39	19.95	19.60	18.85	17.88	17.42	16.98	16.28	15.50	14.61	13.90	13.31	12.81	12.71	12.45	12.28	12.24
69	India	206	60.55	60.08	59.11	58.21	57.52	57.07	56.60	56.16	55.70	54.71	53.61	52.37	51.30	50.71	49.66	48.77	47.54	46.11	44.77	43.68	42.67	42.06	41.18	40.41	39.64	38.98	38.26	37.30	36.40	35.49
70	Indonesia	143	102.42	101.64	99.75	97.73	95.77	93.56	91.30	88.82	86.47	84.15	82.21	80.62	78.95	77.40	75.64	73.51	71.26	69.18	66.99	64.97	62.93	60.92	58.88	56.81	54.84	53.13	51.28	49.55	48.17	46.71
71	Iran, Islamic Rep.	132	6.52	6.48	6.44	6.40	6.36	6.31	6.23	6.13	6.01	5.87	5.74	5.60	5.42	5.27	4.99	4.73	4.49	4.18	3.98	3.75	3.57	3.45	3.34	3.29	3.24	3.20	3.16	3.15	3.11	3.09
72	Iraq	12	0.15	0.15	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.15	0.15	0.16	0.16	0.16	0.16	0.15	0.14	0.13	0.12	0.11	0.09	0.08	0.08	0.08	0.08	0.07	0.07	0.07	0.06
73	Ireland	131	9.32	9.20	9.06	8.92	8.78	8.64	8.50	8.33	8.16	7.94	7.78	7.75	7.71	7.61	7.44	7.11	6.83	6.67	6.31	6.09	5.90	5.82	5.71	5.48	5.25	4.92	4.61	4.37	4.19	4.14
74	Israel	49	0.09	0.09	0.09	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
75	Italy	96	13.91	13.53	13.12	12.82	12.50	12.16	11.86	11.67	11.57	11.52	11.54	11.52	11.52	11.49	11.47	11.42	11.41	11.40	11.36	11.39	11.43	11.55	11.73	11.88	12.06	12.29	12.48	12.70	12.97	13.23
76	Jamaica	62	0.88	0.88	0.87	0.86	0.85	0.85	0.84	0.84	0.85	0.85	0.85	0.85	0.86	0.86	0.87	0.88	0.88	0.89	0.90	0.91	0.92	0.93	0.94	0.95	0.96	0.97	0.98	0.99	1.00	1.01
77	Japan	159	140.76	136.91	133.04	128.85	123.99	119.63	114.99	110.44	105.76	101.40	97.48	94.59	92.59	90.67	89.23	88.12	86.40	85.15	84.73	84.06	83.74	83.97	84.51	84.81	85.25	85.72	86.25	86.95	87.62	88.65
78	Jordan	18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
79	Kenya	45	0.22	0.21	0.21	0.20	0.20	0.19	0.18	0.18	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.18	0.18	0.18	0.18	0.19	0.19	0.19	0.19	0.19	0.19	0.19
80	Kiribati	35	3.04	3.04	3.03	2.99	2.99	2.99	2.98	2.95	2.95	2.95	2.86	2.78	2.67	2.57	2.50	2.56	2.56	2.42	2.26	2.20	2.14	1.99	1.72	1.76	1.78	1.72	1.68	1.65	1.60	1.42

x 10^6 *tons*

No	Country	No. of Species	Year																														
			1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
81	Korea, Dem. People's Rep.	84	22.84	22.17	21.60	21.09	20.65	20.21	19.77	19.33	18.88	18.44	18.01	17.60	17.22	16.88	16.55	16.25	15.97	15.66	15.35	15.04	14.74	14.45	14.15	13.81	13.46	13.06	12.64	12.05	11.52	10.87	10.27
82	Korea, Rep.	182	73.62	68.30	64.87	62.43	60.62	59.24	58.10	57.07	56.15	55.37	54.72	54.20	53.66	53.16	52.72	52.25	51.80	51.40	51.02	50.60	50.17	49.73	49.24	48.57	47.87	47.02	46.24	45.47	44.64	43.79	42.93
83	Kuwait	24	0.77	0.69	0.64	0.60	0.57	0.55	0.53	0.51	0.50	0.48	0.47	0.46	0.45	0.44	0.44	0.43	0.42	0.41	0.40	0.40	0.39	0.38	0.38	0.37	0.36	0.36	0.36	0.37	0.37	0.37	0.38
84	Latvia	48	3.55	3.23	3.01	2.86	2.74	2.65	2.57	2.51	2.45	2.41	2.37	2.34	2.31	2.29	2.26	2.24	2.22	2.19	2.16	2.12	2.09	2.06	2.03	1.99	1.96	1.92	1.89	1.86	1.84	1.82	1.80
85	Lebanon	20	0.24	0.21	0.19	0.18	0.17	0.16	0.15	0.15	0.15	0.14	0.14	0.14	0.13	0.13	0.13	0.13	0.13	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.11	0.11	0.11	0.11	0.11	0.11
86	Liberia	134	1.76	1.58	1.47	1.40	1.35	1.32	1.29	1.26	1.25	1.23	1.21	1.20	1.18	1.17	1.16	1.15	1.14	1.13	1.12	1.11	1.10	1.08	1.05	1.03	1.02	1.01	1.01	1.00	0.99	0.97	0.96
87	Libya	91	1.82	1.65	1.55	1.48	1.43	1.40	1.37	1.34	1.32	1.31	1.29	1.28	1.27	1.27	1.26	1.25	1.25	1.25	1.25	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.23	1.23
88	Lithuania	44	0.87	0.83	0.80	0.78	0.76	0.74	0.72	0.71	0.70	0.68	0.67	0.67	0.66	0.65	0.64	0.64	0.63	0.62	0.62	0.61	0.59	0.58	0.57	0.56	0.55	0.53	0.52	0.51	0.50	0.50	0.49
89	Madagascar	51	3.38	2.99	2.76	2.60	2.50	2.42	2.36	2.31	2.27	2.24	2.21	2.19	2.17	2.15	2.14	2.12	2.11	2.10	2.08	2.06	2.04	2.02	2.00	1.98	1.96	1.94	1.93	1.92	1.90	1.88	1.86
90	Malaysia	171	83.64	75.34	70.35	67.00	64.63	62.87	61.54	60.51	59.71	59.05	58.51	58.05	57.66	57.30	56.95	56.56	56.17	55.78	55.38	54.96	54.65	54.30	53.82	53.28	52.64	51.92	51.22	50.32	49.43	48.45	47.53
91	Maldives	61	3.17	2.86	2.67	2.54	2.44	2.37	2.32	2.28	2.24	2.22	2.19	2.18	2.16	2.15	2.14	2.14	2.12	2.11	2.10	2.09	2.08	2.05	2.03	2.01	1.98	1.95	1.93	1.93	1.93	1.94	1.94
92	Malta	101	0.05	0.05	0.05	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.02	0.02	0.02	0.02
93	Marshall Islands	60	0.81	0.76	0.71	0.69	0.67	0.65	0.64	0.63	0.62	0.61	0.60	0.59	0.59	0.58	0.57	0.57	0.56	0.55	0.54	0.54	0.53	0.53	0.53	0.52	0.50	0.49	0.46	0.44	0.42	0.39	0.38
94	Mauritania	185	22.04	20.33	19.26	18.54	18.01	17.62	17.32	17.09	16.90	16.75	16.62	16.52	16.43	16.33	16.25	16.15	16.05	15.98	15.84	15.61	15.38	15.11	14.80	14.53	14.21	13.78	13.41	12.94	12.68	12.71	12.76
95	Mauritius	46	0.46	0.44	0.43	0.42	0.41	0.41	0.40	0.40	0.39	0.39	0.38	0.38	0.38	0.37	0.37	0.37	0.36	0.36	0.35	0.33	0.33	0.33	0.33	0.32	0.32	0.32	0.32	0.31	0.30	0.30	0.30
96	Mexico	142	61.21	56.43	53.36	51.20	49.54	48.21	47.11	46.13	45.40	44.54	43.71	42.91	42.15	41.51	40.89	40.50	40.24	39.95	39.49	39.15	38.93	38.51	38.09	37.67	37.29	37.04	36.77	36.73	36.70	36.14	35.36
97	Micronesia, Fed. Sts.	65	5.32	5.02	4.81	4.66	4.53	4.44	4.35	4.29	4.23	4.17	4.11	4.08	4.03	4.00	3.98	3.95	3.93	3.90	3.88	3.86	3.82	3.81	3.81	3.80	3.75	3.73	3.72	3.71	3.68	3.61	3.57
98	Montenegro	55	0.04	0.04	0.04	0.04	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
99	Morocco	175	45.88	41.12	38.33	36.41	35.04	34.07	33.34	32.73	32.17	31.70	31.33	31.02	30.76	30.50	30.27	30.05	29.79	29.38	29.00	28.67	28.24	27.78	27.30	26.72	25.97	25.43	24.93	24.51	23.95	23.63	23.46
100	Mozambique	63	4.69	4.28	4.00	3.79	3.64	3.52	3.42	3.33	3.27	3.21	3.16	3.11	3.07	3.03	3.00	2.97	2.94	2.91	2.88	2.85	2.81	2.78	2.74	2.69	2.65	2.59	2.53	2.47	2.42	2.37	2.31
101	Myanmar	92	38.31	34.64	32.35	30.78	29.65	28.80	28.15	27.63	27.21	26.88	26.62	26.41	26.27	26.15	26.06	26.01	25.93	25.88	25.82	25.74	25.65	25.57	25.48	25.40	25.25	25.16	25.04	24.90	24.77	24.67	24.58
102	Namibia	42	61.03	60.63	60.07	59.31	58.54	57.88	57.33	56.84	56.38	55.97	55.48	55.00	54.41	53.71	52.57	50.96	49.04	46.97	44.01	39.91	36.30	34.36	32.30	30.75	28.80	26.89	24.75	23.11	22.27	21.28	20.91
103	Netherlands	146	14.13	13.59	13.11	12.71	12.29	11.95	11.69	11.46	11.19	10.95	10.72	10.51	10.25	10.01	9.71	9.42	9.21	9.01	8.93	8.79	8.62	8.43	8.26	8.11	7.97	7.83	7.72	7.69	7.70	7.74	7.76
104	New Caledonia	39	0.33	0.29	0.27	0.26	0.25	0.24	0.23	0.23	0.22	0.22	0.22	0.21	0.21	0.20	0.20	0.20	0.20	0.20	0.19	0.19	0.19	0.19	0.18	0.18	0.17	0.17	0.17	0.16	0.16	0.16	0.15
105	New Zealand	87	25.37	24.48	23.82	23.30	22.88	22.52	22.22	21.95	21.71	21.52	21.32	21.13	20.99	20.88	20.77	20.67	20.55	20.43	20.31	20.15	20.00	19.84	19.63	19.31	18.98	18.57	18.32	17.83	17.11	16.95	16.68
106	Nicaragua	32	1.12	1.06	1.02	0.99	0.95	0.93	0.91	0.89	0.87	0.85	0.84	0.82	0.80	0.78	0.77	0.75	0.74	0.72	0.70	0.67	0.65	0.62	0.60	0.58	0.55	0.54	0.52	0.50	0.48	0.47	0.46
107	Nigeria	49	10.30	9.49	8.97	8.61	8.34	8.14	7.98	7.86	7.76	7.68	7.62	7.56	7.52	7.48	7.45	7.41	7.37	7.34	7.30	7.27	7.25	7.21	7.12	7.04	6.97	6.90	6.85	6.79	6.73	6.69	6.64
108	Northern Mariana Islands	83	0.12	0.12	0.12	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.09	0.09	0.09	0.09	0.08	0.07	0.07	0.06	0.06	0.05	0.04
109	Norway	136	81.93	75.81	71.72	68.86	67.03	65.07	63.83	62.43	61.40	60.59	59.76	58.98	58.26	57.76	57.29	56.85	56.09	54.44	52.29	51.00	50.13	49.02	48.07	47.06	46.25	45.49	44.95	43.50	41.96	41.24	40.58
110	Oman	59	5.19	4.64	4.30	4.07	3.90	3.76	3.64	3.55	3.47	3.41	3.35	3.31	3.26	3.22	3.18	3.15	3.12	3.08	3.05	3.02	3.00	2.98	2.96	2.94	2.92	2.89	2.87	2.84	2.81	2.78	2.74
111	Pakistan	122	25.03	23.11	21.91	21.08	20.39	19.86	19.42	19.06	18.80	18.56	18.36	18.16	17.99	17.87	17.72	17.52	17.32	17.09	16.90	16.75	16.59	16.43	16.30	16.13	15.94	15.81	15.68	15.53	15.35	15.08	14.86
112	Palau	54	1.36	1.18	1.08	1.01	0.97	0.94	0.91	0.90	0.88	0.87	0.86	0.85	0.84	0.84	0.83	0.83	0.82	0.82	0.81	0.81	0.81	0.80	0.79	0.80	0.79	0.79	0.79	0.79	0.79	0.80	0.80
113	Panama	52	5.19	4.97	4.81	4.69	4.60	4.52	4.45	4.38	4.32	4.27	4.21	4.16	4.12	4.06	3.94	3.84	3.76	3.64	3.57	3.52	3.51	3.49	3.45	3.43	3.38	3.36	3.34	3.24	3.10	3.06	2.99
114	Papua New Guinea	52	6.75	5.71	5.16	4.82	4.59	4.41	4.29	4.19	4.11	4.04	3.98	3.95	3.91	3.86	3.84	3.80	3.79	3.75	3.73	3.71	3.67	3.41	3.17	3.22	3.24	3.20	3.23	3.23	3.25	3.27	3.32
115	Peru	49	292.92	281.47	272.59	265.55	259.88	255.24	251.37	248.05	245.07	242.07	238.14	233.07	226.50	218.51	211.57	202.24	196.09	188.57	179.65	170.63	163.87	152.41	143.93	143.57	146.44	146.82	148.13	148.28	150.83	152.16	153.54
116	Philippines	160	37.09	32.27	29.52	27.72	26.46	25.52	24.80	24.25	23.83	23.47	23.18	22.94	22.73	22.53	22.31	22.07	21.83	21.60	21.38	21.12	20.93	20.76	20.61	20.42	20.21	20.03	19.81	19.61	19.43	19.28	19.15
117	Poland	53	5.07	4.86	4.70	4.56	4.44	4.34	4.25	4.17	4.10	4.04	3.98	3.93	3.89	3.84	3.80	3.77	3.73	3.69	3.65	3.59	3.54	3.48	3.43	3.37	3.31	3.24	3.16	3.10	3.04	3.00	2.95
118	Portugal	239	13.18	12.79	12.45	12.13	11.81	11.51	11.28	11.02	10.77	10.52	10.29	10.05	9.80	9.56	9.30	8.98	8.66	8.43	8.20	8.02	7.92	7.73	7.57	7.41	7.23	7.14	7.08	7.01	6.96	6.93	6.90
119	Puerto Rico	37	0.17	0.17	0.16	0.16	0.16	0.16	0.15	0.15	0.15	0.15	0.15	0.14	0.14	0.14	0.14	0.13	0.13	0.13	0.13	0.13	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.11	0.11	0.11	0.11
120	Qatar	43	0.25	0.24	0.22	0.22	0.21	0.20	0.20	0.20	0.20	0.20	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.17	0.17	0.17	0.17	0.17	0.17

x 10^6 *tons*

No	Country	No. of Species	Year																													
			1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
81	Korea, Dem. People's Rep.	84	9.72	9.14	8.58	8.22	7.91	7.63	7.32	6.93	6.64	6.33	6.31	6.41	6.52	6.61	6.72	6.87	7.12	7.39	7.69	8.00	8.31	8.63	8.94	9.26	9.49	9.79	10.09	10.41	10.73	11.08
82	Korea, Rep.	182	42.14	41.31	40.63	39.89	39.14	38.51	37.56	36.82	36.17	35.45	34.75	34.22	33.72	32.91	32.17	31.44	31.19	31.26	30.70	29.87	29.23	28.85	28.61	28.40	28.04	27.66	27.26	26.83	26.34	26.10
83	Kuwait	24	0.39	0.39	0.38	0.37	0.36	0.35	0.35	0.33	0.31	0.30	0.30	0.30	0.29	0.28	0.27	0.26	0.26	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.24	0.24	0.24
84	Latvia	48	1.77	1.74	1.72	1.69	1.66	1.63	1.61	1.59	1.57	1.56	1.55	1.54	1.53	1.53	1.51	1.48	1.42	1.36	1.34	1.33	1.32	1.32	1.31	1.31	1.30	1.30	1.30	1.30	1.29	1.27
85	Lebanon	20	0.11	0.11	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.11	0.11	0.10	0.10	0.10	0.10	0.09	0.09	0.09	0.09	0.08	0.08	0.08	0.08	0.08
86	Liberia	134	0.95	0.93	0.91	0.90	0.89	0.87	0.85	0.83	0.79	0.77	0.74	0.72	0.71	0.70	0.69	0.68	0.67	0.65	0.64	0.63	0.62	0.61	0.60	0.59	0.58	0.57	0.55	0.54	0.52	0.51
87	Libya	91	1.22	1.22	1.21	1.20	1.19	1.18	1.17	1.16	1.15	1.14	1.13	1.13	1.12	1.11	1.10	1.08	1.07	1.05	1.04	1.01	0.98	0.95	0.91	0.87	0.82	0.78	0.75	0.70	0.66	0.62
88	Lithuania	44	0.48	0.47	0.46	0.45	0.44	0.43	0.43	0.42	0.41	0.41	0.41	0.40	0.40	0.39	0.38	0.37	0.35	0.32	0.31	0.30	0.29	0.29	0.28	0.27	0.27	0.26	0.26	0.24	0.24	0.23
89	Madagascar	51	1.84	1.82	1.80	1.78	1.76	1.74	1.71	1.67	1.65	1.63	1.60	1.58	1.55	1.52	1.47	1.44	1.41	1.37	1.33	1.30	1.27	1.24	1.21	1.19	1.17	1.14	1.12	1.09	1.06	1.02
90	Malaysia	171	46.65	45.75	44.97	44.23	43.64	43.07	42.57	41.97	41.52	40.97	40.42	39.82	39.03	38.24	37.41	36.43	35.47	34.59	33.77	32.86	31.98	31.26	30.53	29.72	28.87	28.16	27.46	26.84	26.42	26.01
91	Maldives	61	1.94	1.93	1.93	1.92	1.91	1.88	1.86	1.84	1.82	1.80	1.77	1.73	1.70	1.68	1.72	1.75	1.77	1.79	1.80	1.82	1.83	1.83	1.82	1.81	1.65	1.50	1.35	1.27	1.20	1.12
92	Malta	101	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
93	Marshall Islands	60	0.37	0.36	0.36	0.33	0.34	0.35	0.35	0.35	0.35	0.36	0.37	0.38	0.38	0.38	0.38	0.39	0.39	0.39	0.34	0.33	0.32	0.27	0.23	0.23	0.22	0.21	0.20	0.20	0.20	0.19
94	Mauritania	185	12.59	12.36	12.10	11.87	11.72	11.51	11.26	10.90	10.52	10.17	9.84	9.54	9.42	9.36	9.37	9.42	9.34	9.20	9.05	8.92	8.77	8.56	8.41	8.24	7.98	7.67	7.57	7.41	7.22	7.03
95	Mauritius	46	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.29	0.29	0.29	0.28	0.28	0.27	0.27	0.26	0.25	0.25	0.23	0.22	0.22	0.20	0.19	0.17	0.16	0.16	0.15	0.15	0.15	0.15	0.14
96	Mexico	142	34.25	32.80	31.80	31.24	30.72	30.12	29.51	28.80	28.23	27.51	26.93	26.28	26.02	25.75	25.40	24.88	24.27	23.67	23.48	23.30	23.06	22.79	22.49	22.16	22.07	22.12	22.09	21.94	21.64	21.41
97	Micronesia, Fed. Sts.	65	3.55	3.49	3.46	3.40	3.25	3.19	3.00	2.88	2.71	2.59	2.50	2.40	2.25	2.10	1.99	1.86	1.81	1.82	1.83	1.76	1.67	1.65	1.65	1.49	1.38	1.22	1.04	0.82	0.84	0.79
98	Montenegro	55	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
99	Morocco	175	23.21	23.02	22.80	22.47	22.25	22.03	21.70	21.47	20.95	20.47	20.04	19.65	19.51	19.28	18.88	18.42	18.30	17.98	17.74	17.56	17.16	16.52	16.16	15.92	15.68	15.45	15.37	15.35	15.16	14.83
100	Mozambique	63	2.24	2.18	2.12	2.07	2.03	1.99	1.94	1.90	1.86	1.82	1.79	1.75	1.72	1.69	1.66	1.64	1.62	1.60	1.58	1.56	1.55	1.54	1.53	1.53	1.53	1.54	1.55	1.56	1.58	1.60
101	Myanmar	92	24.49	24.40	24.26	24.10	23.92	23.73	23.48	23.17	22.88	22.58	22.25	21.90	21.47	20.99	20.40	19.78	19.10	18.50	17.90	17.28	16.59	15.97	15.33	14.71	14.09	13.47	12.92	12.46	12.19	11.91
102	Namibia	42	20.56	19.89	19.39	18.80	18.47	18.28	18.31	17.49	17.25	17.44	17.90	18.56	19.09	19.51	20.08	20.76	21.53	22.33	23.05	23.77	24.50	25.25	25.95	26.61	27.34	28.07	28.84	29.70	30.57	31.40
103	Netherlands	146	7.74	7.69	7.57	7.45	7.34	7.12	6.93	6.78	6.64	6.46	6.35	6.28	6.24	6.18	6.15	6.10	6.16	6.22	6.21	6.20	6.22	6.27	6.34	6.41	6.49	6.60	6.70	6.83	6.97	7.07
104	New Caledonia	39	0.15	0.15	0.14	0.14	0.14	0.14	0.14	0.14	0.13	0.13	0.13	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
105	New Zealand	87	16.40	16.03	15.68	15.25	14.71	14.31	13.79	12.98	12.13	11.43	10.96	10.56	10.12	9.81	9.51	9.22	8.96	8.63	8.26	7.96	7.73	7.50	7.26	6.98	6.74	6.58	6.40	6.25	6.17	6.11
106	Nicaragua	32	0.45	0.44	0.44	0.45	0.45	0.45	0.46	0.47	0.47	0.48	0.48	0.48	0.48	0.48	0.48	0.47	0.46	0.45	0.43	0.41	0.40	0.39	0.38	0.37	0.37	0.36	0.36	0.36	0.36	0.37
107	Nigeria	49	6.60	6.54	6.47	6.40	6.31	6.23	6.15	6.06	5.96	5.85	5.79	5.64	5.50	5.36	5.22	5.06	4.91	4.75	4.60	4.45	4.29	4.14	3.99	3.82	3.67	3.51	3.35	3.21	3.06	2.93
108	Northern Mariana Islands	83	0.03	0.02	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.03	0.03	0.03	0.03	0.03	0.04	0.04	0.04	0.04	0.04	0.05	0.05	0.05	0.05	0.06	0.06	0.06	0.06
109	Norway	136	40.04	39.21	38.46	37.43	36.91	36.71	36.88	36.99	37.16	37.42	37.88	37.62	37.26	36.64	36.11	35.47	34.92	34.11	33.67	33.41	33.09	32.84	32.51	32.43	32.50	32.74	33.07	33.17	33.22	33.13
110	Oman	59	2.71	2.69	2.67	2.63	2.60	2.56	2.54	2.49	2.41	2.38	2.33	2.31	2.27	2.20	2.17	2.10	2.06	2.03	2.01	1.99	1.96	1.92	1.88	1.84	1.77	1.72	1.67	1.62	1.57	1.52
111	Pakistan	122	14.66	14.41	14.19	13.94	13.68	13.42	13.17	12.88	12.54	12.24	11.87	11.49	11.12	10.61	10.33	10.06	9.81	9.51	9.24	8.92	8.66	8.38	8.12	7.88	7.58	7.38	7.16	6.96	6.74	6.53
112	Palau	54	0.78	0.76	0.73	0.70	0.67	0.65	0.64	0.62	0.62	0.61	0.63	0.62	0.62	0.63	0.63	0.62	0.58	0.55	0.56	0.55	0.55	0.56	0.55	0.54	0.52	0.51	0.50	0.47	0.43	0.39
113	Panama	52	2.87	2.82	2.75	2.61	2.57	2.38	2.34	2.28	2.28	2.21	2.21	2.18	2.15	2.10	2.06	2.00	1.98	1.94	1.85	1.86	1.75	1.62	1.52	1.45	1.42	1.40	1.40	1.38	1.35	1.30
114	Papua New Guinea	52	3.34	3.34	3.31	3.30	3.27	3.19	3.13	3.07	3.06	2.91	2.79	2.64	2.58	2.56	2.44	2.19	2.17	2.19	2.25	2.33	2.33	2.40	2.49	2.49	2.49	2.49	2.46	2.42	2.37	2.26
115	Peru	49	156.09	158.61	159.75	163.17	164.31	164.41	162.45	162.01	158.28	153.81	150.53	147.02	142.42	135.96	125.07	119.27	112.67	108.42	110.29	105.47	97.30	93.28	87.74	85.90	78.87	72.32	69.13	65.55	61.78	58.47
116	Philippines	160	19.05	18.95	18.84	18.75	18.67	18.61	18.53	18.43	18.35	18.16	17.95	17.74	17.46	17.14	16.84	16.57	16.31	16.07	15.76	15.48	15.21	14.91	14.56	14.21	13.87	13.46	13.20	12.81	12.38	11.96
117	Poland	53	2.88	2.82	2.76	2.69	2.62	2.56	2.51	2.47	2.44	2.41	2.39	2.37	2.34	2.30	2.21	2.12	1.98	1.83	1.73	1.66	1.58	1.51	1.47	1.42	1.37	1.34	1.31	1.26	1.24	1.20
118	Portugal	239	6.81	6.72	6.67	6.64	6.58	6.48	6.36	6.26	6.20	6.15	6.15	6.15	6.14	6.13	6.17	6.21	6.27	6.35	6.43	6.53	6.65	6.75	6.87	6.98	7.10	7.20	7.30	7.39	7.45	7.55
119	Puerto Rico	37	0.10	0.10	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.11	0.11	0.11	0.11	0.11
120	Qatar	43	0.17	0.17	0.17	0.17	0.17	0.16	0.16	0.16	0.16	0.16	0.15	0.15	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.13	0.13	0.12	0.11	0.11	0.10	0.10

x 10^6 tons

No	Country	No. of Species	Year																														
			1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
121	Romania	26	0.34	0.33	0.32	0.31	0.30	0.30	0.29	0.29	0.28	0.27	0.27	0.26	0.26	0.25	0.25	0.25	0.24	0.24	0.24	0.24	0.24	0.24	0.23	0.23	0.23	0.22	0.22	0.22	0.22	0.22	0.21
122	Russian Federation	193	250.38	235.10	223.97	215.69	209.18	203.85	199.11	195.06	191.65	189.14	187.19	185.73	184.33	183.17	181.78	180.57	179.20	177.82	176.37	174.59	173.18	171.78	170.38	169.24	166.92	164.67	161.95	159.42	157.01	154.93	153.10
123	Samoa	60	0.42	0.39	0.37	0.36	0.34	0.33	0.33	0.32	0.31	0.31	0.30	0.30	0.29	0.29	0.28	0.28	0.28	0.27	0.27	0.27	0.26	0.26	0.26	0.25	0.25	0.25	0.25	0.24	0.24	0.24	0.23
124	São Tomé and Principe	141	1.07	1.02	0.97	0.94	0.91	0.88	0.86	0.85	0.83	0.82	0.80	0.79	0.78	0.77	0.77	0.76	0.75	0.75	0.73	0.71	0.69	0.68	0.66	0.63	0.62	0.61	0.60	0.58	0.56	0.56	0.55
125	Saudi Arabia	75	2.26	2.15	2.07	2.01	1.97	1.94	1.91	1.88	1.86	1.84	1.82	1.81	1.79	1.77	1.75	1.73	1.71	1.68	1.63	1.59	1.54	1.51	1.48	1.44	1.39	1.37	1.34	1.32	1.28	1.26	1.26
126	Senegal	156	28.12	26.93	26.09	25.46	24.97	24.57	24.21	23.90	23.63	23.38	23.08	22.76	22.47	22.17	21.88	21.58	21.32	21.06	20.76	20.40	19.95	19.46	18.90	18.31	17.76	17.19	16.60	16.08	15.64	15.28	15.00
127	Seychelles	34	1.47	1.36	1.29	1.24	1.20	1.17	1.15	1.13	1.11	1.10	1.09	1.08	1.07	1.07	1.06	1.06	1.05	1.05	1.05	1.00	0.99	0.99	0.98	0.97	0.98	0.98	0.98	0.99	0.99	0.99	0.99
128	Sierra Leone	131	6.31	5.37	4.87	4.54	4.31	4.14	4.01	3.91	3.83	3.76	3.70	3.65	3.58	3.51	3.44	3.39	3.35	3.31	3.27	3.23	3.20	3.17	3.14	3.10	3.05	3.01	2.96	2.92	2.88	2.84	2.82
129	Singapore	61	0.24	0.23	0.22	0.22	0.21	0.21	0.20	0.20	0.20	0.19	0.19	0.19	0.18	0.18	0.18	0.18	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.16	0.16
130	Sint Maarten (Dutch part)	26	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
131	Slovenia	68	0.04	0.04	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
132	Solomon Islands	14	1.87	1.70	1.60	1.53	1.47	1.43	1.41	1.39	1.37	1.36	1.35	1.35	1.34	1.32	1.32	1.32	1.32	1.31	1.31	1.31	1.30	1.30	1.24	1.25	1.26	1.25	1.26	1.25	1.25	1.24	1.24
133	Somalia	96	3.06	2.81	2.66	2.55	2.48	2.42	2.37	2.34	2.31	2.29	2.27	2.26	2.24	2.23	2.23	2.22	2.21	2.20	2.20	2.19	2.18	2.17	2.16	2.16	2.16	2.15	2.15	2.14	2.13	2.13	2.12
134	South Africa	101	39.38	37.93	36.74	35.62	34.70	33.92	33.27	32.76	32.27	31.75	31.20	30.58	29.83	29.06	28.23	27.38	26.48	25.60	24.42	22.79	21.45	20.82	20.24	19.71	18.96	18.17	17.46	16.95	16.66	16.33	16.04
135	Spain	251	29.13	28.06	27.06	26.34	25.69	25.08	24.40	23.85	23.31	22.77	22.24	21.74	21.17	20.71	20.21	19.80	19.39	19.01	18.64	18.26	17.95	17.56	17.34	17.11	16.84	16.63	16.31	16.05	15.75	15.53	15.38
136	Sri Lanka	120	13.52	12.06	11.21	10.63	10.21	9.89	9.64	9.43	9.27	9.12	9.00	8.89	8.79	8.69	8.61	8.51	8.46	8.41	8.36	8.31	8.27	8.23	8.21	8.18	8.15	8.10	8.04	7.98	7.93	7.79	7.67
137	St. Kitts and Nevis	30	0.05	0.05	0.05	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
138	St. Lucia	56	0.15	0.15	0.14	0.14	0.14	0.13	0.13	0.12	0.12	0.12	0.12	0.11	0.11	0.11	0.11	0.11	0.10	0.10	0.10	0.10	0.10	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.08	0.08
139	St. Martin (French part)	32	0.03	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
140	St. Vincent and the Grenad	66	0.20	0.19	0.18	0.18	0.17	0.17	0.16	0.15	0.14	0.14	0.14	0.13	0.13	0.13	0.12	0.12	0.12	0.12	0.11	0.11	0.10	0.10	0.10	0.09	0.09	0.09	0.09	0.09	0.09	0.08	0.08
141	Sudan	23	0.08	0.07	0.07	0.07	0.07	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
142	Suriname	70	1.86	1.67	1.56	1.48	1.43	1.38	1.35	1.32	1.30	1.28	1.27	1.25	1.23	1.21	1.20	1.18	1.17	1.15	1.14	1.12	1.10	1.07	1.05	1.02	0.99	0.97	0.94	0.93	0.91	0.90	0.89
143	Sweden	85	11.97	11.11	10.49	10.02	9.64	9.34	9.09	8.88	8.69	8.53	8.39	8.27	8.17	8.07	7.97	7.89	7.80	7.71	7.61	7.49	7.39	7.31	7.24	7.16	7.05	6.95	6.85	6.76	6.68	6.61	6.52
144	Syrian Arab Republic	167	13.62	13.15	12.81	12.53	12.30	12.09	11.90	11.72	11.55	11.39	11.23	11.10	10.95	10.80	10.64	10.48	10.33	10.19	10.04	9.88	9.71	9.53	9.36	9.18	8.99	8.84	8.64	8.43	8.15	7.88	7.68
145	Tanzania	91	3.12	2.81	2.62	2.49	2.38	2.31	2.24	2.19	2.15	2.12	2.09	2.06	2.04	2.02	2.00	1.98	1.96	1.93	1.91	1.88	1.87	1.85	1.83	1.80	1.79	1.77	1.72	1.68	1.64	1.60	1.58
146	Thailand	90	70.15	65.01	61.48	58.89	56.89	55.31	54.03	52.96	52.06	51.29	50.62	50.03	49.49	48.97	48.45	47.88	47.11	46.30	45.46	44.53	43.57	42.56	41.52	40.50	39.64	39.15	38.76	38.37	37.50	36.86	36.47
147	Togo	112	1.52	1.43	1.38	1.33	1.30	1.27	1.25	1.22	1.20	1.18	1.16	1.14	1.13	1.11	1.09	1.08	1.06	1.05	1.03	1.02	1.00	0.99	0.97	0.96	0.94	0.92	0.91	0.90	0.89	0.89	0.87
148	Tonga	78	0.21	0.20	0.20	0.19	0.19	0.19	0.18	0.18	0.18	0.18	0.17	0.17	0.17	0.16	0.16	0.16	0.16	0.15	0.15	0.15	0.15	0.14	0.14	0.14	0.13	0.13	0.13	0.12	0.12	0.12	0.12
149	Trinidad and Tobago	95	0.92	0.87	0.84	0.81	0.79	0.77	0.75	0.73	0.72	0.71	0.70	0.69	0.68	0.67	0.67	0.66	0.65	0.65	0.64	0.63	0.61	0.60	0.58	0.57	0.56	0.54	0.53	0.52	0.50	0.49	0.47
150	Tunisia	84	2.19	2.01	1.89	1.81	1.75	1.70	1.67	1.64	1.61	1.59	1.58	1.56	1.54	1.53	1.51	1.50	1.49	1.48	1.46	1.45	1.44	1.44	1.43	1.42	1.41	1.40	1.39	1.37	1.35	1.33	1.31
151	Turkey	112	24.20	22.10	20.72	19.75	19.06	18.48	18.05	17.66	17.37	17.14	16.94	16.78	16.66	16.59	16.41	16.28	16.10	15.98	15.72	15.60	15.44	15.28	15.16	15.05	15.00	14.99	14.99	14.95	14.89	14.71	14.37
152	Turks and Caicos Islands	29	0.35	0.33	0.32	0.30	0.29	0.28	0.27	0.26	0.25	0.25	0.24	0.24	0.24	0.24	0.24	0.24	0.25	0.25	0.25	0.26	0.26	0.27	0.27	0.27	0.28	0.28	0.28	0.28	0.28	0.28	0.28
153	Tuvalu	77	0.38	0.35	0.33	0.32	0.31	0.30	0.29	0.29	0.28	0.28	0.28	0.28	0.27	0.27	0.27	0.27	0.27	0.27	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.25	0.26
154	Ukraine	34	3.32	3.18	3.06	2.97	2.90	2.84	2.80	2.76	2.73	2.70	2.68	2.66	2.64	2.61	2.59	2.56	2.54	2.50	2.48	2.46	2.45	2.43	2.41	2.40	2.38	2.33	2.29	2.20	2.14	2.08	2.00
155	United Arab Emirates	64	2.05	1.93	1.84	1.79	1.74	1.71	1.68	1.65	1.63	1.61	1.60	1.58	1.56	1.55	1.54	1.52	1.51	1.50	1.49	1.48	1.47	1.46	1.45	1.44	1.43	1.41	1.39	1.37	1.35	1.33	1.32
156	United Kingdom	260	60.37	58.10	56.35	54.98	53.77	52.79	51.99	51.32	50.72	50.19	49.72	49.25	48.92	48.61	48.28	47.94	47.39	46.80	46.21	45.68	45.22	44.39	43.73	43.02	42.19	41.55	41.13	40.58	39.84	38.86	38.16
157	United States	557	220.20	208.40	199.93	193.14	187.63	182.83	178.68	174.86	171.74	168.94	165.99	162.98	159.82	156.97	154.72	152.56	150.53	148.78	147.22	145.43	143.54	141.29	138.67	135.91	133.56	131.54	129.92	128.05	126.61	124.78	123.04
158	Uruguay	45	3.64	3.42	3.28	3.18	3.11	3.06	3.01	2.98	2.95	2.92	2.90	2.88	2.86	2.84	2.82	2.80	2.78	2.77	2.74	2.73	2.73	2.73	2.72	2.71	2.71	2.70	2.69	2.66	2.62	2.55	2.46
159	Vanuatu	62	0.23	0.21	0.20	0.19	0.19	0.18	0.17	0.17	0.17	0.17	0.17	0.17	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.15	0.15	0.15	0.15	0.15	0.14	0.14
160	Venezuela, RB	116	10.09	9.66	9.32	9.07	8.85	8.67	8.50	8.35	8.21	8.09	7.98	7.88	7.79	7.71	7.62	7.55	7.46	7.40	7.32	7.23	7.14	7.07	6.97	6.85	6.73	6.65	6.55	6.47	6.40	6.33	6.28
161	Vietnam	121	66.52	59.08	54.67	51.77	49.75	48.18	46.91	45.92	45.12	44.45	43.84	43.18	42.64	42.04	41.40	40.82	40.35	39.95	39.63	39.36	39.14	38.97	38.84	38.74	38.67	38.63	38.64	38.55	38.55	38.58	38.58
162	Virgin Islands (U.S.)	36	0.06	0.06	0.05	0.05	0.05	0.05	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.03	0.03	0.03
163	West Bank and Gaza	26	0.09	0.08	0.08	0.07	0.07	0.07	0.07	0.07	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.04	0.04	0.04	0.04	0.04	0.03	0.03	0.03
164	Yemen, Rep.	63	6.87	6.33	5.99	5.74	5.56	5.43	5.32	5.25	5.19	5.14	5.10	5.07	5.04	5.02	5.00	4.98	4.96	4.95	4.93	4.91	4.90	4.88	4.86	4.84	4.80	4.75	4.71	4.64	4.57	4.52	4.47

x 10^6 *tons*

No	Country	No. of Species	Year																													
			1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
121	Romania	26	0.21	0.20	0.20	0.19	0.18	0.17	0.16	0.15	0.14	0.13	0.12	0.11	0.11	0.10	0.10	0.10	0.09	0.09	0.09	0.09	0.09	0.10	0.10	0.10	0.11	0.11	0.11	0.12	0.12	0.13
122	Russian Federation	193	151.20	148.98	146.11	143.20	138.68	133.97	129.18	125.21	121.68	117.38	112.72	108.24	104.33	102.19	101.28	98.89	95.11	91.50	88.96	87.30	86.73	86.10	87.09	87.44	89.09	90.25	91.36	91.93	92.51	92.58
123	Samoa	60	0.23	0.23	0.22	0.22	0.21	0.21	0.21	0.20	0.20	0.20	0.20	0.20	0.21	0.21	0.21	0.20	0.20	0.20	0.19	0.18	0.18	0.17	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.15
124	São Tomé and Principe	141	0.55	0.54	0.53	0.52	0.51	0.50	0.48	0.46	0.42	0.41	0.40	0.39	0.38	0.37	0.36	0.36	0.36	0.35	0.35	0.35	0.34	0.34	0.33	0.33	0.33	0.32	0.32	0.32	0.32	0.32
125	Saudi Arabia	75	1.26	1.25	1.23	1.21	1.18	1.14	1.06	1.03	1.00	0.97	0.95	0.93	0.90	0.88	0.82	0.80	0.77	0.74	0.71	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.68	0.68	0.67
126	Senegal	156	14.63	14.37	14.12	13.93	13.73	13.54	13.35	13.01	12.75	12.51	12.14	11.82	11.40	11.10	10.87	10.70	10.34	10.06	9.83	9.63	9.50	9.35	9.25	9.20	9.11	9.00	8.95	8.96	9.02	9.08
127	Seychelles	34	1.00	1.00	1.00	1.00	0.97	0.95	0.93	0.91	0.86	0.82	0.81	0.79	0.75	0.71	0.70	0.65	0.65	0.64	0.65	0.65	0.65	0.62	0.60	0.53	0.47	0.43	0.39	0.35	0.33	0.32
128	Sierra Leone	131	2.79	2.77	2.75	2.73	2.72	2.71	2.70	2.68	2.66	2.64	2.61	2.61	2.61	2.62	2.63	2.64	2.66	2.69	2.72	2.74	2.73	2.68	2.61	2.51	2.42	2.34	2.26	2.19	2.12	2.04
129	Singapore	61	0.16	0.16	0.15	0.14	0.13	0.13	0.12	0.12	0.13	0.13	0.13	0.12	0.11	0.11	0.11	0.11	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.09	0.09	0.09	0.09
130	Sint Maarten (Dutch part)	26	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
131	Slovenia	68	0.03	0.03	0.03	0.03	0.03	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
132	Solomon Islands	14	1.24	1.24	1.24	1.23	1.19	1.20	1.21	1.23	1.23	1.22	1.21	1.20	1.20	1.19	1.19	1.19	1.18	1.17	1.12	1.13	1.17	1.17	1.19	1.17	1.09	1.00	0.92	0.85	0.74	0.72
133	Somalia	96	2.11	2.10	2.09	2.08	2.06	2.04	2.03	2.00	1.98	1.97	1.94	1.92	1.88	1.84	1.79	1.75	1.67	1.61	1.56	1.49	1.43	1.38	1.31	1.16	1.04	0.92	0.87	0.84	0.82	0.79
134	South Africa	101	15.92	15.80	15.75	15.58	15.64	15.66	15.65	14.99	14.47	14.39	14.68	15.02	15.14	15.40	15.70	15.96	16.36	16.69	16.97	17.23	17.42	17.49	17.55	17.55	17.48	17.48	17.69	17.84	18.01	18.30
135	Spain	251	15.27	15.16	15.05	15.07	15.04	15.09	15.19	15.29	15.41	15.52	15.64	15.73	15.84	15.95	16.00	16.06	16.16	16.23	16.32	16.43	16.59	16.70	16.94	17.18	17.46	17.67	17.84	18.10	18.36	18.61
136	Sri Lanka	120	7.53	7.43	7.34	7.27	7.22	7.20	7.16	7.13	7.07	7.04	7.02	6.99	6.89	6.78	6.66	6.49	6.31	6.19	6.07	5.94	5.74	5.52	5.28	4.97	4.73	4.73	4.56	4.44	4.32	4.21
137	St. Kitts and Nevis	30	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
138	St. Lucia	56	0.08	0.08	0.07	0.05	0.05	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.07	0.07	0.07	0.07	0.07	0.07	0.08	0.07	0.07	0.07	0.07	0.07	0.07	0.07
139	St. Martin (French part)	32	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
140	St. Vincent and the Grenad	66	0.07	0.07	0.06	0.06	0.06	0.06	0.06	0.06	0.07	0.07	0.07	0.07	0.07	0.08	0.08	0.08	0.08	0.09	0.09	0.09	0.09	0.10	0.10	0.10	0.10	0.10	0.11	0.11	0.11	0.11
141	Sudan	23	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
142	Suriname	70	0.90	0.89	0.89	0.88	0.88	0.87	0.87	0.86	0.86	0.86	0.87	0.87	0.86	0.86	0.85	0.83	0.82	0.81	0.79	0.78	0.76	0.74	0.72	0.70	0.67	0.66	0.65	0.62	0.60	0.60
143	Sweden	85	6.40	6.29	6.18	6.06	5.91	5.80	5.72	5.66	5.58	5.50	5.44	5.39	5.31	5.20	5.03	4.85	4.68	4.51	4.32	4.21	4.13	4.09	4.07	4.09	4.09	4.09	4.11	4.14	4.18	4.20
144	Syrian Arab Republic	167	7.47	7.29	7.08	6.89	6.70	6.47	6.24	6.05	5.87	5.65	5.48	5.36	5.26	5.20	5.14	5.04	4.93	4.85	4.81	4.79	4.80	4.81	4.78	4.70	4.63	4.54	4.51	4.54	4.59	4.62
145	Tanzania	91	1.56	1.53	1.53	1.52	1.49	1.47	1.45	1.43	1.41	1.39	1.36	1.34	1.31	1.31	1.30	1.30	1.26	1.25	1.23	1.20	1.18	1.15	1.12	1.10	1.07	1.04	1.03	1.01	0.99	0.97
146	Thailand	90	36.27	36.03	35.70	35.38	35.27	35.17	34.80	34.20	33.78	33.34	32.86	32.23	31.35	30.43	29.43	28.38	27.61	27.13	26.67	26.23	25.66	25.34	25.13	24.82	24.63	24.33	23.90	23.96	23.72	23.55
147	Togo	112	0.86	0.84	0.83	0.82	0.81	0.80	0.79	0.78	0.77	0.76	0.75	0.74	0.73	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.73	0.73	0.73	0.74	0.74	0.75	0.76	0.76	0.77	0.79
148	Tonga	78	0.12	0.12	0.12	0.12	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
149	Trinidad and Tobago	95	0.46	0.44	0.42	0.42	0.42	0.42	0.42	0.41	0.40	0.39	0.38	0.37	0.36	0.36	0.35	0.35	0.36	0.36	0.36	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.38	0.38	0.38	0.38
150	Tunisia	84	1.28	1.26	1.24	1.22	1.18	1.15	1.11	1.06	1.02	0.98	0.95	0.93	0.90	0.88	0.85	0.84	0.83	0.82	0.81	0.80	0.78	0.77	0.77	0.76	0.75	0.73	0.72	0.70	0.69	0.69
151	Turkey	112	14.00	13.60	13.19	12.71	12.29	11.89	11.50	11.06	10.58	10.41	10.36	10.33	10.16	9.87	9.52	9.14	8.94	8.87	8.76	8.51	8.37	8.18	7.94	7.81	7.62	7.60	7.44	7.15	7.08	7.07
152	Turks and Caicos Islands	29	0.28	0.28	0.28	0.28	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.28	0.28	0.28	0.28	0.28	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.26	0.26	0.26	0.26
153	Tuvalu	77	0.26	0.26	0.26	0.25	0.25	0.25	0.26	0.26	0.25	0.26	0.26	0.25	0.25	0.25	0.25	0.25	0.25	0.26	0.24	0.23	0.22	0.21	0.19	0.20	0.19	0.18	0.18	0.17	0.15	0.13
154	Ukraine	34	1.91	1.84	1.77	1.72	1.65	1.60	1.56	1.51	1.42	1.36	1.35	1.37	1.38	1.39	1.39	1.39	1.40	1.40	1.40	1.40	1.38	1.33	1.30	1.28	1.26	1.23	1.21	1.21	1.20	1.17
155	United Arab Emirates	64	1.30	1.28	1.27	1.25	1.23	1.22	1.20	1.18	1.15	1.12	1.09	1.06	1.04	1.01	0.98	0.95	0.92	0.89	0.86	0.82	0.78	0.74	0.72	0.69	0.67	0.65	0.63	0.61	0.60	0.59
156	United Kingdom	260	37.19	36.35	35.26	34.21	33.51	32.63	31.66	30.51	29.31	28.18	27.36	26.56	25.88	25.42	24.94	24.23	23.76	23.19	22.65	21.80	21.20	20.76	20.45	20.17	20.01	20.03	19.97	19.57	19.27	19.24
157	United States	557	121.25	119.56	117.77	116.05	113.69	111.58	109.85	108.09	106.63	105.45	104.28	102.92	101.53	100.39	99.25	98.48	97.93	97.28	97.01	96.76	96.64	96.28	95.98	95.48	94.82	94.50	94.01	93.52	93.48	93.56
158	Uruguay	45	2.36	2.25	2.17	2.08	2.01	1.93	1.85	1.78	1.74	1.69	1.67	1.60	1.54	1.49	1.43	1.38	1.33	1.27	1.20	1.18	1.15	1.14	1.12	1.10	1.06	1.01	0.94	0.90	0.86	0.84
159	Vanuatu	62	0.14	0.13	0.14	0.14	0.14	0.14	0.14	0.14	0.13	0.13	0.13	0.13	0.12	0.12	0.12	0.12	0.12	0.12	0.11	0.11	0.11	0.11	0.11	0.10	0.10	0.10	0.10	0.09	0.09	0.08
160	Venezuela, RB	116	6.22	6.17	6.09	6.01	5.93	5.84	5.75	5.63	5.57	5.45	5.33	5.19	5.07	4.87	4.65	4.40	4.18	3.99	3.75	3.58	3.47	3.27	3.06	2.86	2.53	2.37	2.27	2.20	2.17	2.09
161	Vietnam	121	38.62	38.61	38.51	38.26	38.06	37.85	37.61	37.37	37.13	36.81	36.50	36.14	35.77	35.33	34.64	33.95	33.20	32.48	31.73	30.74	29.81	28.96	28.18	27.26	26.59	25.95	25.33	24.72	24.10	23.28
162	Virgin Islands (U.S.)	36	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
163	West Bank and Gaza	26	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.02	0.02
164	Yemen, Rep.	63	4.38	4.31	4.28	4.24	4.18	4.11	4.02	3.95	3.88	3.82	3.80	3.76	3.75	3.73	3.72	3.68	3.65	3.59	3.49	3.39	3.32	3.21	3.04	2.79	2.52	2.32	2.14	2.05	2.06	2.03