

AGREP

Arkansas Global Rice Economics Program

International Rice Baseline Briefing Book

International Rice Baseline Projections, 2013-2023

Report Prepared by

Eric J. Wailes and Eddie C. Chavez¹

In cooperation with

The Food and Agricultural Policy Research Institute, University of Missouri

March 2014

Department of Agricultural Economics and Agribusiness
Division of Agriculture
Room 217, Agriculture Building
University of Arkansas
Fayetteville, AR 72701

¹ L.C. Carter Chair and Distinguished Professor, and Senior Program Associate, respectively at the Department of Agricultural Economics, Division of Agriculture, University of Arkansas, Fayetteville.

Published by the Arkansas Global Rice Economics Program (AGREP) at the University of Arkansas, Fayetteville, 217 Agriculture Building, Department of Agricultural Economics and Agribusiness, Fayetteville, AR 72701. AGREP is part of the Department of Agricultural Economics and Agribusiness in the Dale Bumpers College of Agricultural, Food, and Life Sciences and Division of Agriculture, University of Arkansas.

<http://www.uark.edu/ua/ricersch/>

This material is based upon work supported in part by a sub-grant from the University of Missouri, Food and Agricultural Policy Research Institute (FAPRI–MU) under a cooperative research agreement with U.S. Department of Agriculture, No. 58-0111-13-002. The material is also based on work supported by the Arkansas Rice Research and Promotion Board.

Any opinions, findings, conclusions, or recommendations expressed in this publication are those of the authors and do not necessarily reflect the views of the U.S. Department of Agriculture, the University of Arkansas, Division of Agriculture, nor the Arkansas Rice Research and Promotion Board.

The authors of this report and the global rice projections presented in this report were prepared by the team at AGREP, including Eric J. Wailes (ewailes@uark.edu) and Eddie C. Chavez (echavez@uark.edu).

Global rice projections were prepared with the help of the team at FAPRI-MU, including Pat Westhoff (westhoffp@missouri.edu), Scott Gerlt (gerlts@missouri.edu), Jarrett Whistance (jwxbb@mail.missouri.edu), Julian Binfield (binfieldj@missouri.edu) and Wyatt Thompson (thompsonw@missouri.edu); and Mike Helmar (mhelmar@cabnr.unr.edu) at the University of Nevada-Reno, and Darren Hudson (Darren.hudson@ttu.edu) at Texas Tech University.

The authors would like to thank participants in a workshop where a preliminary version of these estimates were reviewed in Washington, DC in December 2013. Any errors in this report are solely the responsibility of the authors.

©Copyright 2014 by Eric J. Wailes and Eddie C. Chavez. All rights reserved. Readers may make verbatim copies of this document for non-commercial purposes by any means, provided that this copyright notice appears on all such copies.

Table of Contents

Abstract..... 9

Introduction 10

Rice Policy Overview 11

 Key Policy Drivers 11

Overview of Global Rice Supply and Demand 14

Results of the Deterministic Baseline Analysis..... 17

 Detailed Results on Global Rice Supply and Demand 17

 Rice Export Supplies 18

 Rice Import Demand 20

 Rice Harvested Area and Production..... 22

 Rice Domestic Consumption 23

 Rice Global Stocks 24

Rice Supply and Demand by World Region..... 25

 Africa..... 25

 Americas..... 26

 Asia..... 26

 Europe..... 27

 Oceania 27

 World..... 27

 ECOWAS 28

Results of Stochastic Baseline Analysis 28

 Detailed Results of the Stochastic Baseline Analysis..... 28

Conclusions and Summary 29

Estimates of the Deterministic Baseline Analysis 30

Estimates of the Stochastic Baseline Analysis 69

References	82
------------------	----

List of Figures

Figure 1 Separation between Thai Rice and other Asian Export Prices after Implementation of the Paddy Pledging Program	12
Figure 2 Impacts of 2011 of the Paddy Pledging Program on Thai Exports and Stocks.....	12
Figure 3 Historical and Projected World Reference Rice Prices.....	13
Figure 4 U.S. Rice Export Prices relative to World Reference Prices for long-grain rice.	14
Figure 5 World Rice Harvested Area and Yield, Historical and Projected.	15
Figure 6 World Rice Supplies, Consumption, Trade and Ending Stocks, Historical and Projected	15
Figure 7 Per capita rice ending stocks for selected countries, Historical and Projected.	16
Figure 8 Top World Rice Exporting Countries, Historical and Projected.....	18
Figure 9 Net Rice Exports by World Regions, Historical and Projected.....	19
Figure 10 Shares of total rice exports by world regions, Historical and Projected.	20
Figure 11 Rice imports by top countries, Historical and Projected.	21
Figure 12 Net Rice Imports by World Regions, Historical and Projected.....	21
Figure 13 Shares of total rice imports by world regions, Historical and Projected.	22
Figure 14 Top world rice producing countries, Historical and Projected.....	23
Figure 15 Top World rice consuming countries, Historical and Projected.....	24
Figure 16 Top countries of rice ending stocks, Historical and Projected.	25
Figure 17 Stochastic Projection of Long Grain Rice International Reference Price	70
Figure 18 Stochastic Projection of U.S. Long Grain Rice FOB Export Price.	70
Figure 19 Stochastic Projection Comparisons of International Reference and U.S. Long Grain Rice Export Prices.	71
Figure 20 Stochastic Projection of Medium Grain Rice Price, FOB California.....	71
Figure 21 Stochastic Projection of U.S. Season Average All Rice Farm Price.....	72
Figure 22 Stochastic Projection of U.S. Long Grain Average Farm Price.	72
Figure 23 Stochastic Projection of U.S. Medium Grain Average Farm Price.....	73

Figure 24 Stochastic Projection of World Rice Net Trade.	73
Figure 25 Stochastic Projection of World Rice Area Harvested.	74
Figure 26 Stochastic Projection of World Rice Milled Production.	74
Figure 27 Stochastic Projection of World Total Rice Consumption.	75
Figure 28 Stochastic Projection of World Rice Ending Stocks.	75
Figure 29 Stochastic Projections of Thailand Net Rice Exports.	76
Figure 30 Stochastic Projection of Thailand Rice Ending Stocks.	76
Figure 31 Stochastic Projections of Vietnam Net Rice Exports.	77
Figure 32 Stochastic Projections of India Net Rice Exports.	77
Figure 33 Stochastic Projection of India Rice Ending Stocks.	78
Figure 34 Stochastic Projections of U.S. Net Rice Exports.	78
Figure 35 Stochastic Projections of Philippine Net Rice Imports.	79
Figure 36 Stochastic Projections of Indonesia Net Rice Imports.	79
Figure 37 Stochastic Projections of People’s Republic of China Net Rice Imports.	80
Figure 38 Stochastic Projections of Nigeria Net Rice Imports.	80
Figure 39 Stochastic Projections of ECOWAS-15 Net Rice Imports.	81

List of Tables

Table 1 World Rice Net Trade by Country and International Reference Prices, 2013-2023	31
Table 2 World Rice Supply, Utilization, Total Trade and Stocks-to Use, 2013-2023.	33
Table 3 U.S. Rice Supply, Utilization, Net Trade and Farm Prices, 2013-2023.	33
Table 4 Argentina Rice Supply, Utilization and Net Trade, 2013-2023	34
Table 5 Australia Rice Supply, Utilization and Net Trade, 2013-2023.....	34
Table 6 Bangladesh Rice Supply, Utilization and Net Trade, 2013-2023.....	35
Table 7 Brazil Rice Supply, Utilization and Net Trade, 2013-2023.....	35
Table 8 Brunei Darussalam Rice Supply, Utilization and Net Trade, 2013-2023.....	36
Table 9 Cambodia Rice Supply, Utilization and Net Trade, 2013-2023	36

Table 10 Cameroon Rice Supply, Utilization and Net Trade, 2013-2023.....	37
Table 11 Canada Rice Utilization and Net Trade, 2013-2023.....	37
Table 12 People’s Republic of China Rice Supply, Utilization and Net Trade, 2013-2023	38
Table 13 Colombia Rice Supply, Utilization and Net Trade, 2013-2023.....	38
Table 14 Cote D’Ivoire Rice Supply, Utilization and Net Trade, 2013-2023	39
Table 15 Egypt Rice Supply, Utilization and Net Trade, 2013-2023.....	39
Table 16 EU-27 Rice Supply, Utilization and Net Trade, 2013-2023.....	40
Table 17 Ghana Rice Supply, Utilization and Net Trade, 2013-2023	40
Table 18 Guinea Rice Supply, Utilization and Net Trade, 2013-2023.....	41
Table 19 China-Hong Kong Rice Utilization and Net Trade, 2013-2023	41
Table 20 India Rice Supply, Utilization and Net Trade, 2013-2023	42
Table 21 Indonesia Rice Supply, Utilization and Net Trade, 2013-2023.....	42
Table 22 Iran Rice Supply, Utilization and Net Trade, 2013-2023	43
Table 23 Iraq Rice Supply, Utilization and Net Trade, 2013-2023	43
Table 24 Japan Rice Supply, Utilization and Net Trade, 2013-2023	44
Table 25 Kenya Rice Supply, Utilization and Net Trade, 2013-2023	44
Table 26 Lao PDR Rice Supply, Utilization and Net Trade, 2013-2023	45
Table 27 Liberia Rice Supply, Utilization and Net Trade, 2013-2023.....	45
Table 28 Malaysia Rice Supply, Utilization and Net Trade, 2013-2023.....	46
Table 29 Mali Rice Supply, Utilization and Net Trade, 2013-2023.....	46
Table 30 Mexico Rice Supply, Utilization and Net Trade, 2013-2023	47
Table 31 Mozambique Rice Supply, Utilization and Net Trade, 2013-2023	47
Table 32 Myanmar Rice Supply, Utilization and Net Trade, 2013-2023.....	48
Table 33 Nigeria Rice Supply, Utilization and Net Trade, 2013-2023	48
Table 34 Pakistan Rice Supply, Utilization and Net Trade, 2013-2023.....	49
Table 35 Philippines Rice Supply, Utilization and Net Trade, 2013-2023	49

Table 36 Saudi Arabia Rice Supply, Utilization and Net Trade, 2013-2023	50
Table 37 Senegal Rice Supply, Utilization and Net Trade, 2013-2023.....	50
Table 38 Sierra Leone Rice Supply, Utilization and Net Trade, 2013-2023.....	51
Table 39 Singapore Rice Utilization and Net Trade, 2013-2023	51
Table 40 South Africa Rice Supply, Utilization and Net Trade, 2013-2023.....	52
Table 41 South Korea Rice Supply, Utilization and Net Trade, 2013-2023	52
Table 42 Taiwan Rice Supply, Utilization and Net Trade, 2013-2023	53
Table 43 Tanzania Rice Supply, Utilization and Net Trade, 2013-2023.....	53
Table 44 Thailand Rice Supply, Utilization and Net Trade, 2013-2023	54
Table 45 Turkey Rice Supply, Utilization and Net Trade, 2013-2023.....	54
Table 46 Uruguay Rice Supply, Utilization and Net Trade, 2013-2023	55
Table 47 Vietnam Rice Supply, Utilization and Net Trade, 2013-2023.....	55
Table 48 Africa Total Rice Supply, Utilization and Net Trade, 2013-2023.....	56
Table 49 African Aggregate of Countries with Individual AGRM Models – Rice Supply, Utilization, and Net Trade, 2013-2023	56
Table 50 African Aggregate of Other Countries Modeled as a Group in AGRM – Rice Supply, Utilization and Net Trade, 2013-2023	57
Table 51 Western Hemisphere Rice Supply, Utilization and Net Trade, 2013-2023.....	57
Table 52 Western Hemisphere Aggregate of Countries with Individual AGRM Models – Rice Supply, Utilization and Net Trade, 2013-2023	58
Table 53 Western Hemisphere Aggregate of Other Countries Modeled as a Group in AGRM – Rice Supply, Utilization and Net Trade, 2013-2023	58
Table 54 Asian Rice Supply, Utilization and Net Trade, 2013-2023.....	59
Table 55 Asian Aggregate of Countries with Individual Models in AGRM – Rice Supply, Utilization and Net Trade, 2013-2023	59
Table 56 Asian Aggregate of Other Countries Modeled as a Group in AGRM – Rice Supply, Utilization and Net Trade, 2013-2023	60
Table 57 European Total Rice Supply, Utilization and Net Trade, 2013-2023.....	60

Table 58 European Aggregate of Countries Modeled Individually in AGRM – Rice Supply, Utilization and Net Trade, 2013-2023	61
Table 59 European Aggregate of Other Countries Modeled as a Group in AGRM - Rice Supply, Utilization and Net Trade, 2013-2023.....	61
Table 60 Oceania Total Rice Supply, Utilization and Net Trade, 2013-2023.....	62
Table 61 Oceania Aggregate of Countries Modeled individually in AGRM – Rice Supply, Utilization and Net Trade, 2013-2023	62
Table 62 Oceania Aggregate of Other Countries Modeled as a Group in AGRM – Rice Supply, Utilization, and Net Trade, 2013-2023	63
Table 63 World Total Rice Supply, Utilization and Net Trade, 2013-2023.....	63
Table 64 World Aggregate of Countries Modeled individually in AGRM – Rice Supply, Utilization and Net Trade, 2013-2023.....	64
Table 65 World Aggregate of Other Countries Modeled as a Group in AGRM – Rice Supply, Utilization and Net Trade, 2013-2023	64
Table 66 ECOWAS Total Rice Supply, Utilization and Net Trade, 2013-2023	65
Table 67 Projected Rice Milled Yields Per Hectare for the World and Selected Countries, 2013-2023	66
Table 68 Projected Per Capita Rice Utilization for the World and Selected Countries, 2013-2023	67

World Rice Baseline Briefing Book

International Rice Baseline Projections, 2013-2023

Eric J. Wailes and Eddie C. Chavez

Keywords: International rice, baseline, policy, deterministic, stochastic, Arkansas Global Rice Model

JEL Codes: C02, F01, F14, F17, Q17, Q18, R11

Abstract

This outlook contains updated baseline rice projections from the Arkansas Global Rice Economics Program (AGREP) for U.S. and international rice economies. The purpose of this document is to present the current state and the expected directions of the rice economies in the world by assessing their potential supply and demand paths over the next decade. This set of projections serves as a baseline for evaluating and comparing alternative macroeconomic, policy, weather, and technological scenarios. The estimates are intended for use by government agencies and officials, farmers, consumers, agribusinesses and other stakeholders who conduct medium- and long-term planning.

The AGREP baseline projections are grounded in a series of assumptions about the general economy, agricultural policies, weather, and technological change. It is generally assumed that current agricultural policies will be continued in the United States and other countries reported in this study. The projections included in this outlook are based on the information available as of January 2014. In light of the volatility of the global rice economy, a stochastic analysis is included in this report to provide a better understanding of the probable distribution of future outcomes. The stochastic estimates establish likely upper and lower bounds for selected variables.

We acknowledge and appreciate the collaboration with the team at FAPRI-MU, based at the University of Missouri in Columbia, but we take full responsibility for any remaining errors in this document.

Introduction

This outlook is not a set of predictions but rather a framework to present a baseline of the likely direction of key variables in the global rice economy and the degree of variability on some of the key variables. Deterministic and stochastic baseline estimates presented in this report are generated using the Arkansas Global Rice Model (AGRM). AGRM is a multi-country/regional statistical simulation and econometric framework developed and maintained by the Arkansas Global Rice Economics Program (AGREP) with the Department of Agricultural Economics and Agribusiness at the University of Arkansas, Fayetteville.

The AGRM has benefited from working closely with the Food and Agricultural Policy Research Institute (FAPRI) based at the University of Missouri, Columbia which maintains U.S. agricultural and other commodity models. They provide data on U.S. crop prices and net return projections which are transmitted into country models as applicable.

In particular, prices and net returns for corn, soybeans, and wheat are relevant considering that these commodities are substitute crops for rice in the U.S. and other countries. For example, rice area competes with a number of crops including soybeans, corn, and cotton in rice-producing states in the U.S. (Arkansas, Louisiana, Missouri, Mississippi, Texas, and California). In the People's Republic of China (PRC), rice competes with corn in the provinces of Guangxi, Heilongjiang, Jilin, and Liaoning; with wheat in the province of Jiangsu; and with both corn and wheat in the provinces of Anhui, Chongqing, Guizhou, Hubei, Ningxia, Sichuan, and Yunnan. In India, rice competes with wheat particularly in the northern states (Carriquiry et al., 2012; Wailes and Chavez, 2013).

The historical rice data is obtained from the Production, Supply, and Distribution (PS&D) online database of the USDA-FAS and USDA-ERS Rice Outlook as of January 2014. The AGRM rice marketing years by country generally follow the USDA system. For example, *the year 2013 or marketing year 2013/14* in the model refers to January 2014–December 2014 for Thailand, Vietnam, and Indonesia; October 2013–September 2014 for India; July 2013–June 2014 for the Philippines; and April 2013–March 2014 for South American countries. See <http://www.fas.usda.gov/psdonline/psdAvailability.aspx> for details. As such, the annual cumulative growth rates as well as the total growth numbers presented in this document are estimated from the marketing year 2012/13 and cover the 11-year period 2012-2023.

The global model is disaggregated into 46 of the major rice producing, consuming and trading rice countries/regions; and the rest-of-the-world is grouped into five regional aggregations: Africa, the Americas, Asia, Europe, and Oceania. With rice as an ascendant food staple in Sub-Saharan Africa, we provide projections of selected West African countries and for the ECOWAS (the Economic Community of West African States). Each country or regional model includes a supply sector (harvested area and yields), a demand sector (per capita use), with trade, stocks and price linkage equations. Net global rice trade for long grain and medium grain solves for the two world reference prices, long grain and medium grain.

The deterministic baseline assumes the following: a continuation of existing policies; Global Insight projections for macroeconomic variables; no new WTO Doha Round trade reforms; and average weather conditions. Growth rates in rice yields in selected countries are made relatively stronger than previous baselines in recognition of potential positive impacts from the Global Rice Science Partnership (GRiSP) R&D funding on global rice productivity.

The stochastic baseline provides a range of probable outcomes (confidence intervals), as opposed to the deterministic analysis which generates average point estimates. Stochastic estimates are useful given the fact that underlying assumptions in the deterministic baseline usually do not hold true in reality, i.e., actual market outcomes deviate from average estimates. Stochastic analysis provides information on risk and uncertainty which is an important characteristic of the international rice economy.

The stochastic framework is generated using multivariate empirical distributions (MVE) of the yield variable for each of the 51 countries and regions in the model, as well as for each of the six rice-producing states in the U.S. Yield is used because it is the variable that not only varies by year and by country but it is also very sensitive to changes in weather conditions and water availability—factors that are critical for rice production. The MVE take into account serial and geographical covariance. A total of 200 random draws are implemented using a 28-year empirical distribution of historical yields generated using the software Simulation & Econometrics to Analyze Risk (Simetar) developed by Richardson et al.(2008).

Rice Policy Overview

The rice sector policy assumptions by country are documented in Appendix Table 1 of the publication by Wailes and Chavez (2012). Current domestic and trade policies (e.g. tariff rates) are maintained over the baseline.

Key Policy Drivers

- For the past two years the international rice market has been impacted and dominated by two key events. The first is India's official lifting of its ban on non-basmati rice exports as of September 2011. The second is Thailand's implementation in October 2011 of its paddy pledging program (PPP), a price-floor support policy for Thai farmers. The PPP provides price supports to the rice producers which are as much as 50% higher than prevailing market prices (Wailes and Chavez, 2013). This resulted in a separation between Thailand's and other Asian rice export prices until early 2014 (Figure 1).

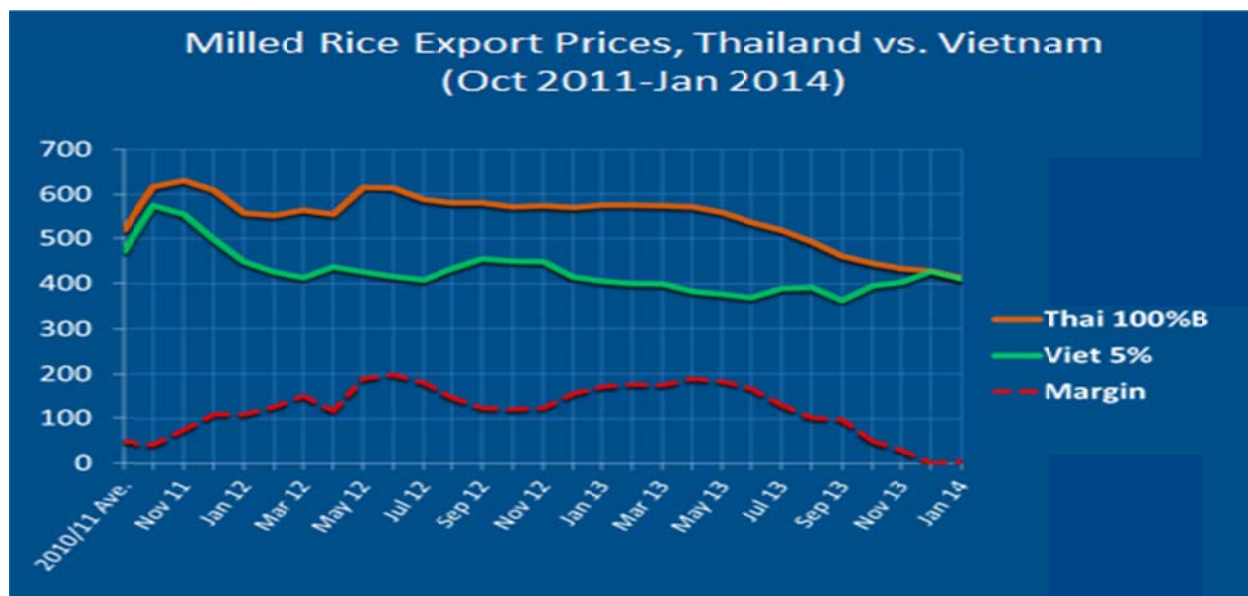


Figure 1 Separation between Thai Rice and other Asian Export Prices after Implementation of the Paddy Pledging Program

- The major consequence of the PPP is that Thailand lost leadership in global rice trade and its rice exports plunged 40% in 2011; and its rice stockpiles doubled (Figure 2). Since May 2013 the Thai 100% B price has substantially declined from \$615 per mt to \$424 per mt, a 31% drop.

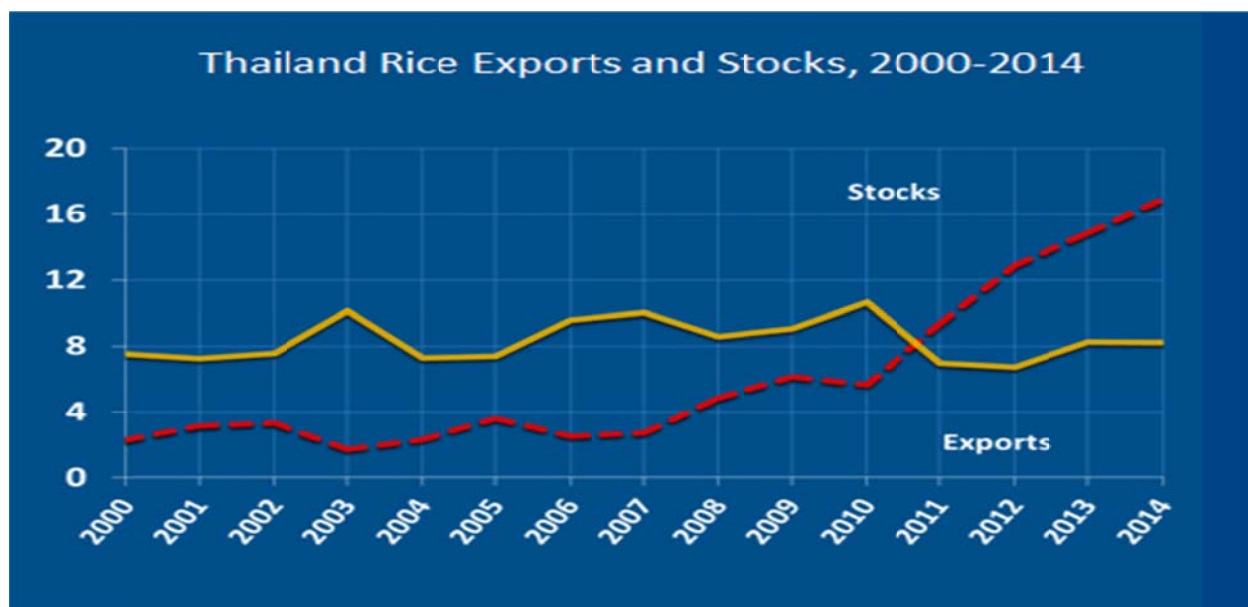


Figure 2 Impacts of 2011 of the Paddy Pledging Program on Thai Exports and Stocks.

- Another consequence of this situation is that the prevailing high Thai rice price has limited its usefulness as the international reference long-grain rice price. As such, the equilibrium rice international reference

prices currently generated by the AGRM (Figure 3) are closer to the prevailing export prices of Vietnam and India (Wailes and Chavez, 2013). This is supported by the fact that the global rice export market is now dominated by India and Vietnam, with relatively dependable supplies also coming from Pakistan, Cambodia and Myanmar. Our projection however suggests that as Thailand abandons the government storage element of the PPP, the Thai 100%B price will resume its useful role as a world reference price for long grain rice.



Figure 3 Historical and Projected World Reference Rice Prices.

- U.S. export prices, however, remain abnormally high---with margins to Asian prices as high as \$200 per mt (Figure 4). By historical standards, this level is not likely to be sustainable as Asian rice exports will be expected to be imported into the U.S. Over the projection period, while global rice prices grow slightly, the high U.S. rice export prices are expected to decline, as the wide U.S. price margin over Asian prices narrows to a more historically-reasonable level of about \$80 by the end of the projection period (Table 1). U.S. average farm prices are projected to follow the declining trend (Table 3).
- There are several factors that can potentially drive the high U.S. prices downward, going forward. These include persistent rice surpluses in India and Thailand; significant investment in production and processing capacity on Mekong Delta in Vietnam, Cambodia and Myanmar; and productivity gains from hybrids and GRiSP research, positively impacting Asian and African rice economies; increasing competition with the U.S. based on quality with competitors; and strong trends in dietary diversification away from rice primarily in Asian countries.

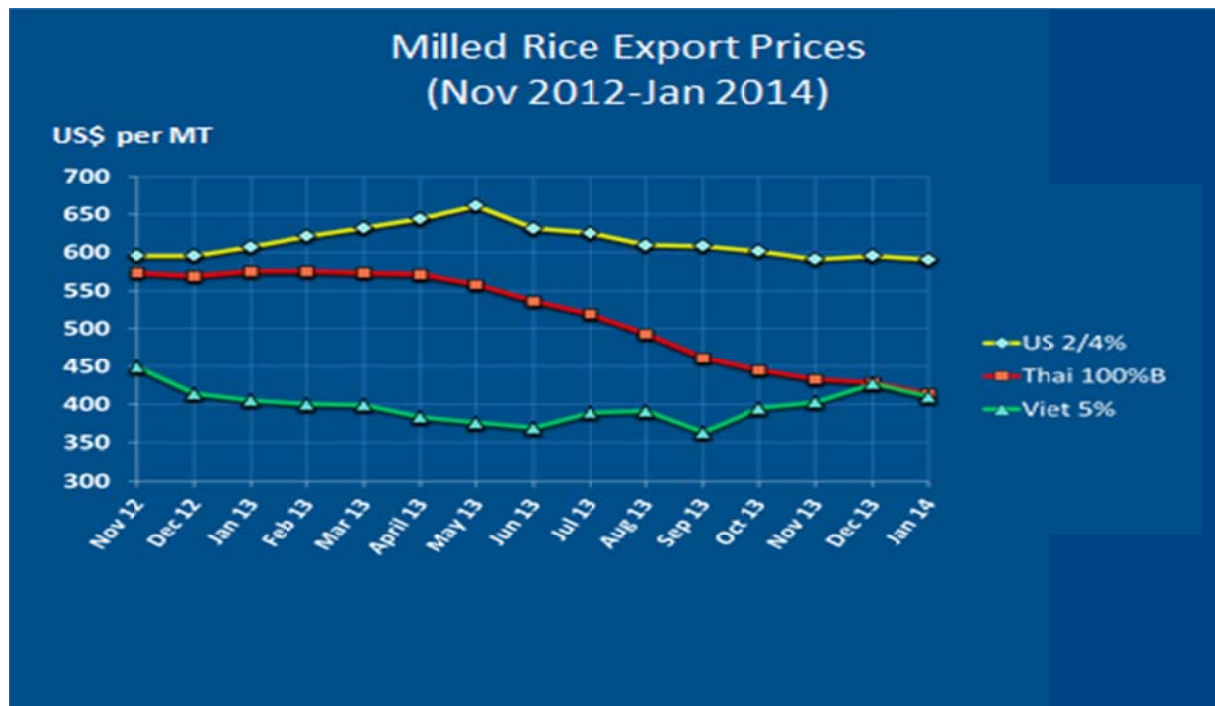


Figure 4 U.S. Rice Export Prices relative to World Reference Prices for long-grain rice.

Overview of Global Rice Supply and Demand

Rice is the most important food crop of the developing world and the staple food of more than half of the world's population, accounting for more than 20% of daily caloric requirement (IRRI, 2013). The international rice prices are highly volatile due to a number of reasons. Rice has price inelastic supply and demand throughout much of Asia, where it is the dominant food staple.

While rice is the primary staple for half the world's population, it is thinly-traded. Only about 7% of rice production is traded as opposed to 10 percent for coarse grains and 16 percent for wheat (Wailes and Chavez, 2012). The international rice trade is highly concentrated with five dominant players (Thailand, India, Vietnam, Pakistan, and the U.S.) accounting for 90% of global net trade (Table 1).

A combination of slow growth in rice consumption and increased output driven by the use of higher-yielding varieties and hybrids and other improved production technologies—in line with more focused self-sufficiency programs of major consuming countries—are expected to have a dampening effect on international rice prices over the next decade. Over the baseline period, as growth in production remains in close tandem with gains in consumption, prices remain relatively stable with long grain rice international reference price remaining within the range \$400-\$412 per mt (Table 1 and Figure 3).

Over the baseline projection period, world rice output grows at 1.01% per year, reaching 525.0 million metric tons (mmt) in 2023 with 0.80% coming from yield improvement and 0.21% coming from growth

in area harvested (Figure 5). Driven solely by population growth, global rice consumption gains 1.02% annually, reaching nearly 522.0 mmt in 2023—with population growing at 1.03% but average world rice per capita use declining very slightly by 0.01% (Table 2 and Figure 6).

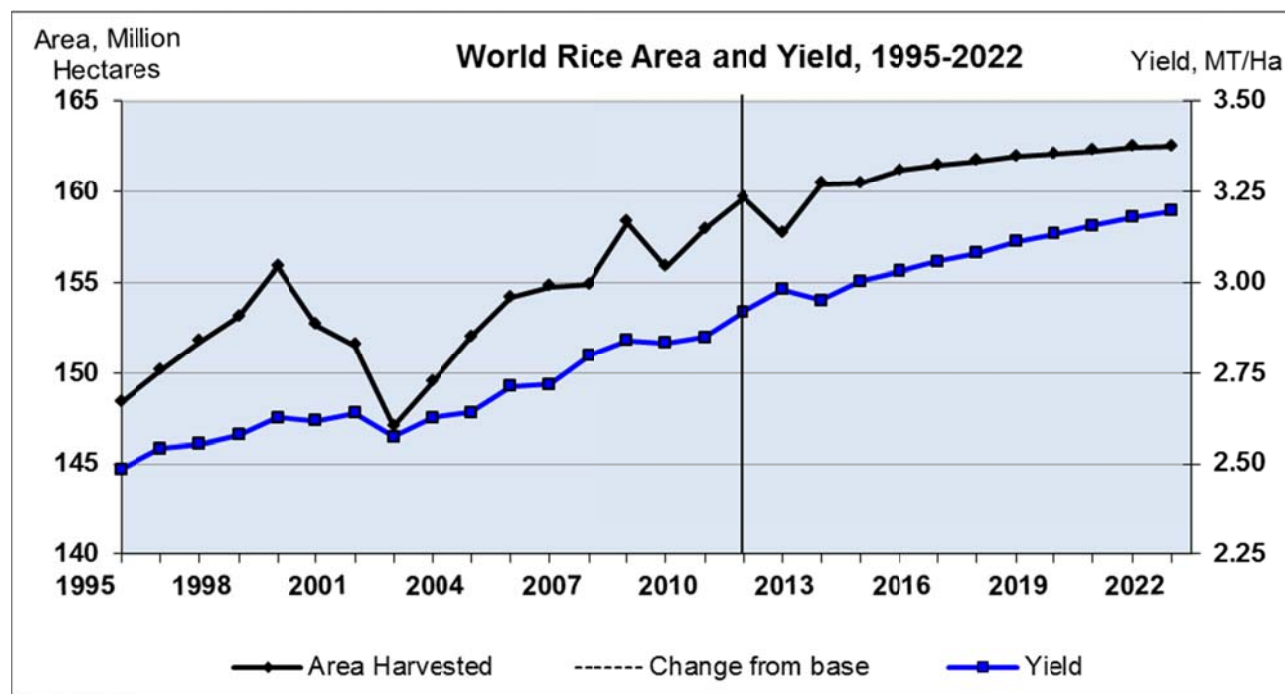


Figure 5 World Rice Harvested Area and Yield, Historical and Projected.

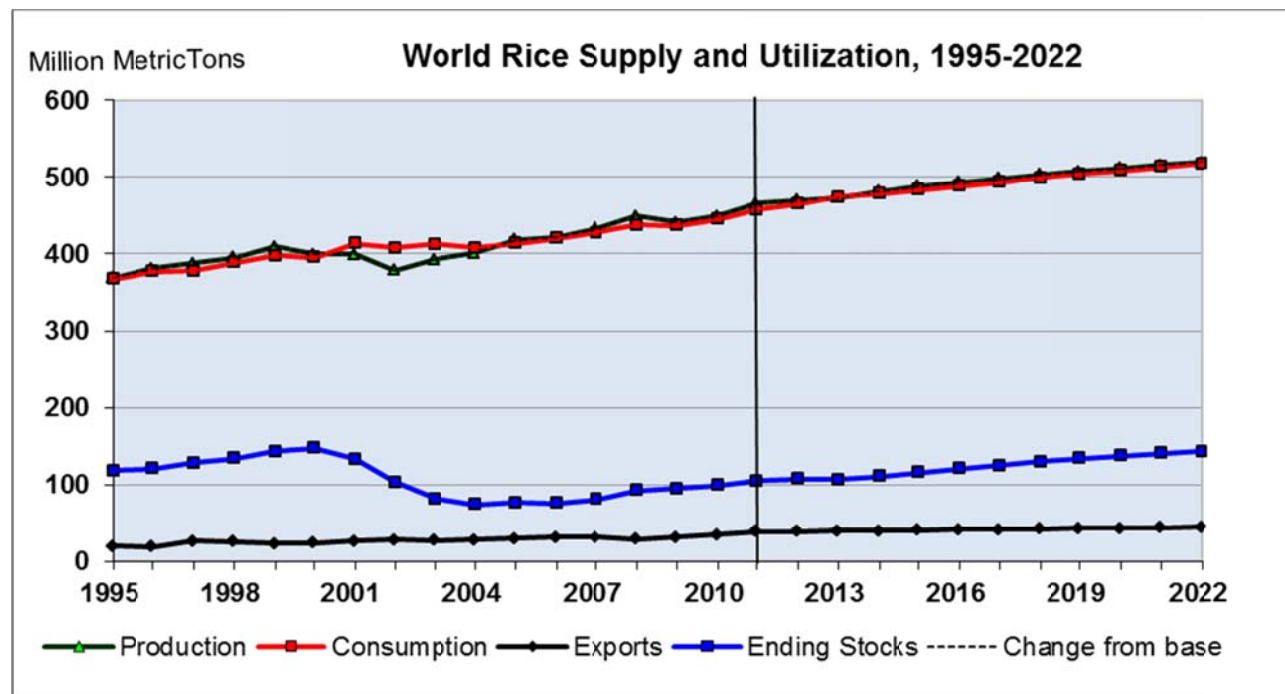


Figure 6 World Rice Supplies, Consumption, Trade and Ending Stocks, Historical and Projected

While industry and government reports typically present only the total rice stocks in particular countries, it is equally interesting to examine the corresponding ending stocks on a per capita basis in order to have a more meaningful population-weighted comparison. Figure 7 depicts comparative paths of per capita stocks of selected major rice exporting and importing countries. With high levels of producer support, per capita stock levels increase in both Thailand and People’s Republic of China (PRC) over the 2013-2023 projected years.

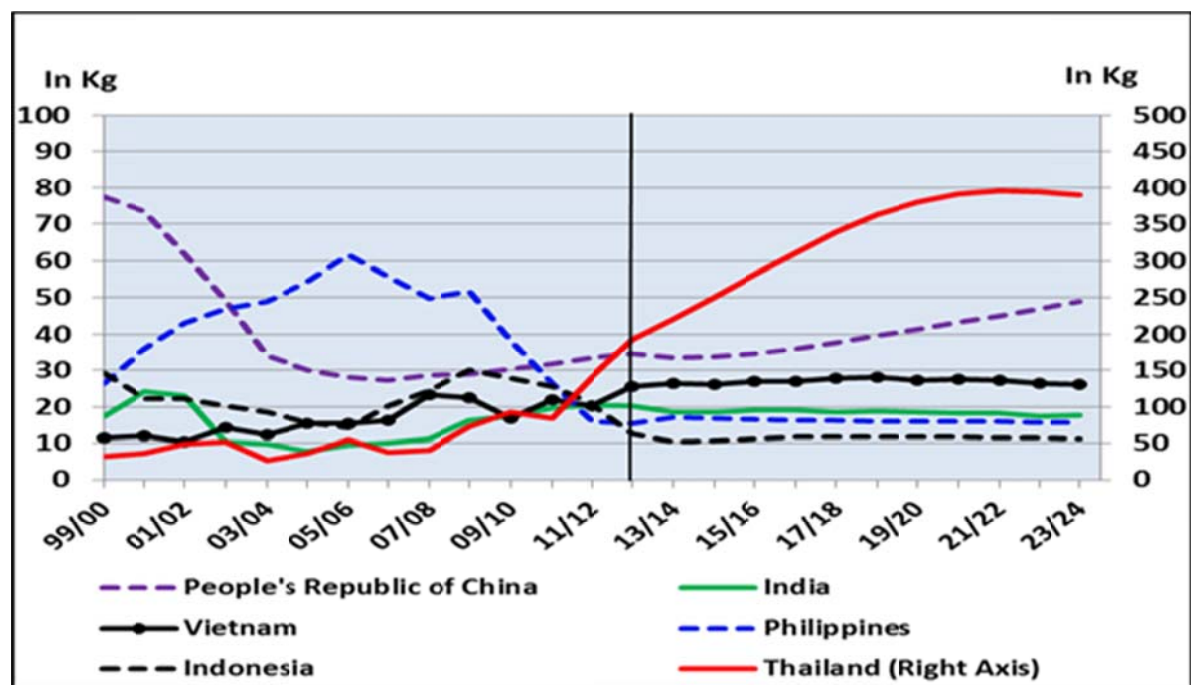


Figure 7 Per capita rice ending stocks for selected countries, Historical and Projected.

Note that while there is a sharp build-up of total rice stocks in Thailand and a considerable accumulation in PRC, only Thailand exhibits a dramatic spike in per capita stock relative to its own historical path. On a per capita basis, PRC’s stock accumulation is relatively gradual and steady, and still consistent with its historical norm. Vietnam is projected to have a slight increase but relatively stable level of per capita rice stocks. Likewise, India’s per capita stock level is historically consistent; and is projected to remain stable.

Interestingly, the per capita stock levels for the Philippines and Indonesia have declined in recent years and are projected to continue at lower levels over the projection period. The stock declines in the Philippines and Indonesia could be related to recent attempts to limit rice imports as both countries push for much publicized rice self-sufficiency. Only time will tell if reductions in ending stock relative to historically safe levels is a prudent course of action.

Global net trade grows at 1.94% per year, reaching nearly 39.0 mmt by 2023. International long grain rice prices are projected to increase only slightly by 0.21% annually, as major rice consuming countries are expected to focus increasingly on self-sufficiency by increasing the use of higher yielding hybrids and

other improved production technologies. Medium grain rice prices are projected to remain stronger relative to long grain prices, with an annual growth of 0.76% per year (Table 1).

Results of the Deterministic Baseline Analysis

- Projections generated from the deterministic analysis by country and by region for the period 2013-2023 are presented in Tables 1 thru 56. To serve as convenient reference, a general list of the tables with description is included below:
- Table 1 is a summary of the net trade by country and international rice prices (international long grain reference price, U.S. long grain export price, and the U.S. medium grain export price which serves as the international reference price for medium grain).
- Table 2 presents the summary of the global rice supply and demand.
- Tables 3 thru 47 are the basic supply and demand projections (production, consumption, stocks, and net trade), by country.
- Tables 48 thru 65 present the world regional (Africa, Asia, Western Hemisphere, Europe, and Oceania) rice supply and demand projections with a sub-regional aggregate for countries of each region that are modeled individually in AGRM, and another sub-regional aggregate for countries of each region that are modeled as a group in AGRM.
- Table 66 presents the rice supply and demand projections for ECOWAS, presented separately to highlight the increasing importance of the region to the global rice economy.
- Table 67 summarizes the rice average yield per hectare by country.
- Table 68 presents the rice average per capita use by country.

Detailed Results on Global Rice Supply and Demand

- Over the projection period, India and PRC are projected to account for 26% of total global population growth, with a combined share in world population of 37% in 2012 and 35% by 2023. By sheer magnitude, the two countries remain the largest global rice economies with combined share of 45% of world area harvested, 52% of total milled rice production, 50% of total rice consumption, and 63% of world rice ending stocks.
- In comparison, the combined global shares of the next six largest rice countries of Thailand, Indonesia, Bangladesh, Vietnam, the Philippines and Myanmar are 34% for area harvested, 30% in production, and 27% in consumption over the same period. Thailand, with its recent PPP-related build-up in stocks, account for 17% of global stocks.

Rice Export Supplies

- Figure 8 shows the world’s top country rice exporters over the projection period. Despite Thailand’s very unpopular and controversial paddy pledging program, it is projected to resume its strong presence in the global rice market over the next ten years. Reports indicate that Thailand is increasing its efforts on negotiating government-to-government rice deals to liquidate their excessive rice stockpile (USDA-FAS, 2013-2014).
- While the Thai government is expected to incur substantial financial losses in the short-term as it ships high-priced rice onto the global market at competitively low prices, the country is expected to recoup its global position as the top rice exporter over the baseline period--given its good infrastructural resources and concerted focus on developing and maintaining a strong presence in the branded high quality rice. The popularity of the country’s “Thai Hom Mali”- branded Jasmine rice which is fragrant long grain rice, is strongly preferred by consumers in many nations.

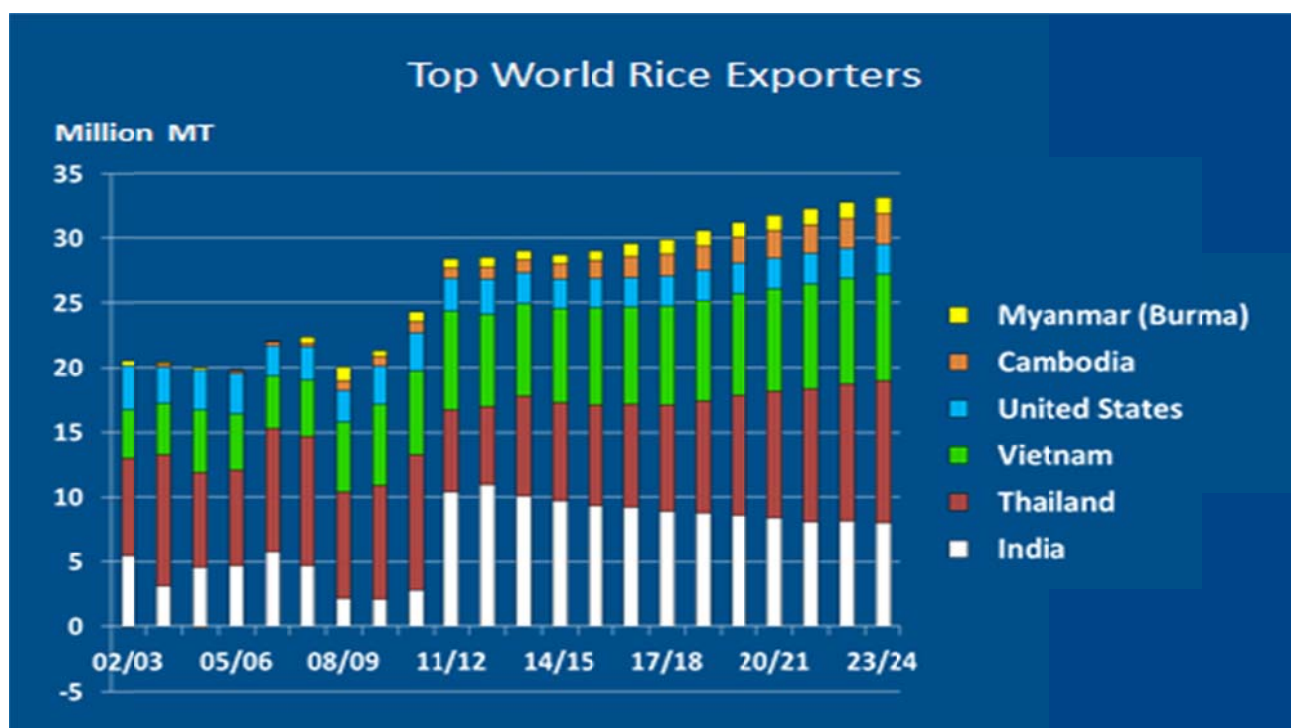


Figure 8 Top World Rice Exporting Countries, Historical and Projected.

India became the top rice exporter in 2011/12 and 2012/13 marketing years, and is projected to remain a leading rice exporter in 2013/14, with total shipments these years exceeding 10 mmt. However, India’s exports are projected to decline steadily from this high level to about 8.0 mmt by 2023, as the country implements its subsidized domestic rice consumption program and legislated in the National Food Security Bill which was signed into law on September 12, 2013 (USDA-FAS, 2013b). It creates an entitlement for eligible beneficiaries to receive 5 kilograms of rice, wheat or coarse grain (millet) at highly

subsidized prices. This reportedly covers 50% of the urban and 75% of the rural populations which translate to about 820 million people (USDA-FAS, 2014).

India’s net exports in 2012/13 were 10.9 mmt, followed by Vietnam with 7.1 mmt, and Thailand with 6.1 mmt. Vietnam’s rice exports are projected to catch up with India’s level by 2022/23 at net exports of 8.0 mmt. Thailand, on the other hand, is projected to equal India’s exports by 2018/19 at about 8.7 mmt; and resume rice export leadership thereafter (Table 1). Rice exports of the U.S. remain relatively flat around 2.3 mmt over most of the projection period, given only slight supply growth in both area and average yields and increasing competition from Asian exporters (Table 3).

Cambodia and Myanmar are two countries with strong potential as rice exporters in the years to come, both with rice exports projected to expand steadily as production continues to exceed consumption. Cambodia’s rice exports are projected to grow at 9.2% annually, reaching 2.4 mmt in 2023, as its total production gains 3.8% per year while its total consumption grows slower at 1.9%. Rice exports of Myanmar, on the other hand, are projected to grow at 6.4% per year, reaching 1.3 mmt in 2023, with its total production and consumption growing at 1.6% and 1.2% per year, respectively.

Global net rice exports totaled 31.7 mmt in 2012 and is projected to grow by a total of 7.1 mmt over the baseline period (2012-2023), or about 1.9% annually, of which nearly 70% is accounted for by Thailand, as it expands exports and regains dominance in global rice trade. By world regions, the top rice exporters are shown in Figure 9 and 10. ASEAN is a sub-regional group of Southeast Asian countries including Brunei Darasullam, Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, Philippines, Singapore, Thailand, and Vietnam.

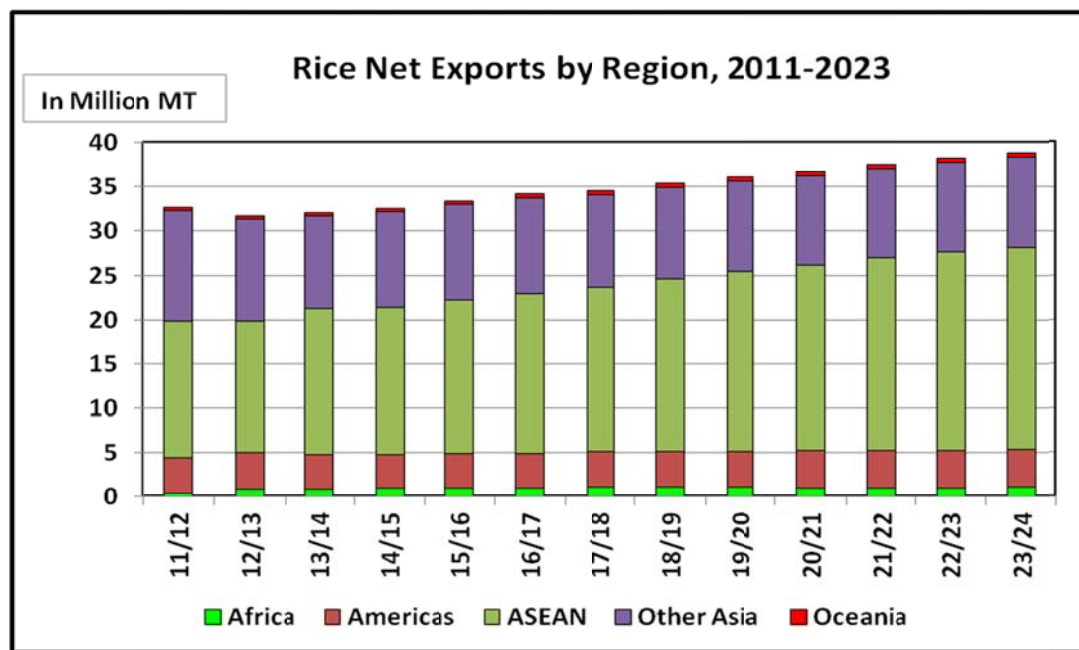


Figure 9 Net Rice Exports by World Regions, Historical and Projected.

In terms of share, the ASEAN region is expected to expand its share from 40% in recent years to more than 50% by 2023.

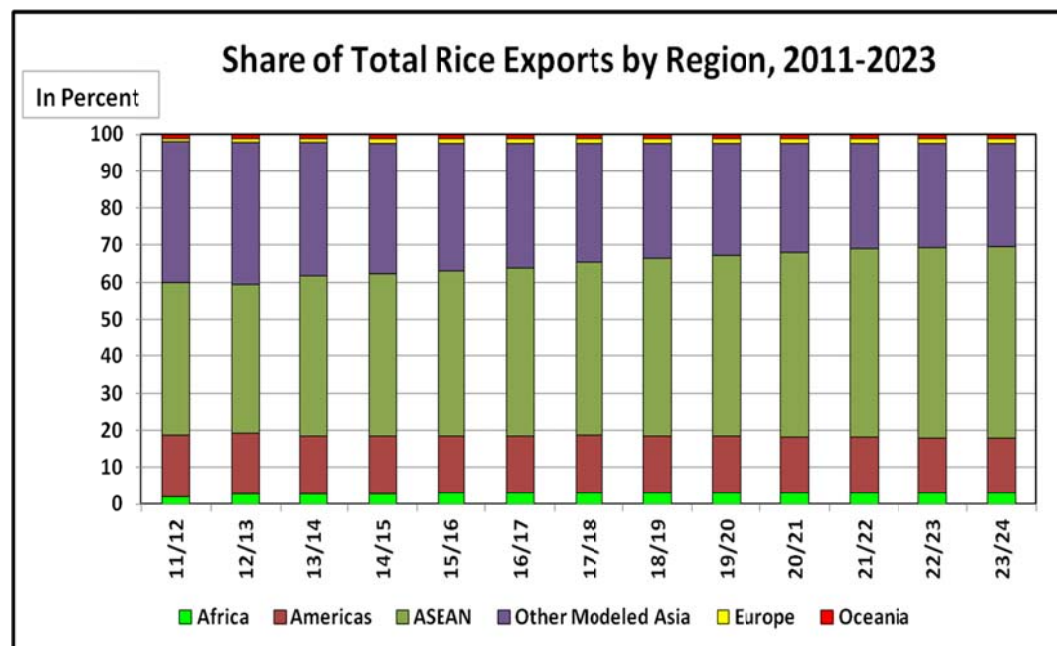


Figure 10 Shares of total rice exports by world regions, Historical and Projected.

Rice Import Demand

- World rice imports are dominated by 10 countries that account for nearly 50% of total imports over the baseline period. They are Nigeria, PRC, Iran, Indonesia, Iraq, Saudi Arabia, Bangladesh, Cote d'Ivoire, the Philippines, and Malaysia. Figure 11 shows the world's top country rice importers.

In terms of growth of rice imports, 47% is projected from two major Asian importing countries of Bangladesh and Indonesia combined, 18% from the 15-member ECOWAS (Economic Community of West African States)², and 14% from the Middle East. These countries/regions account for a total of 79% share in expansion of global net imports. The U.S. total rice imports are projected to increase by 245 thousand mt (or 7.6 mil. cwt), equivalent to a growth of 2.4% per year.

² ECOWAS 15-member countries include Cote D'Ivoire, Ghana, Guinea, Liberia, Mali, Nigeria, Senegal, Sierra Leone, Benin, Burkina-Faso, Gambia, Guinea-Bissau, Niger, Togo, and Cabo Verde.

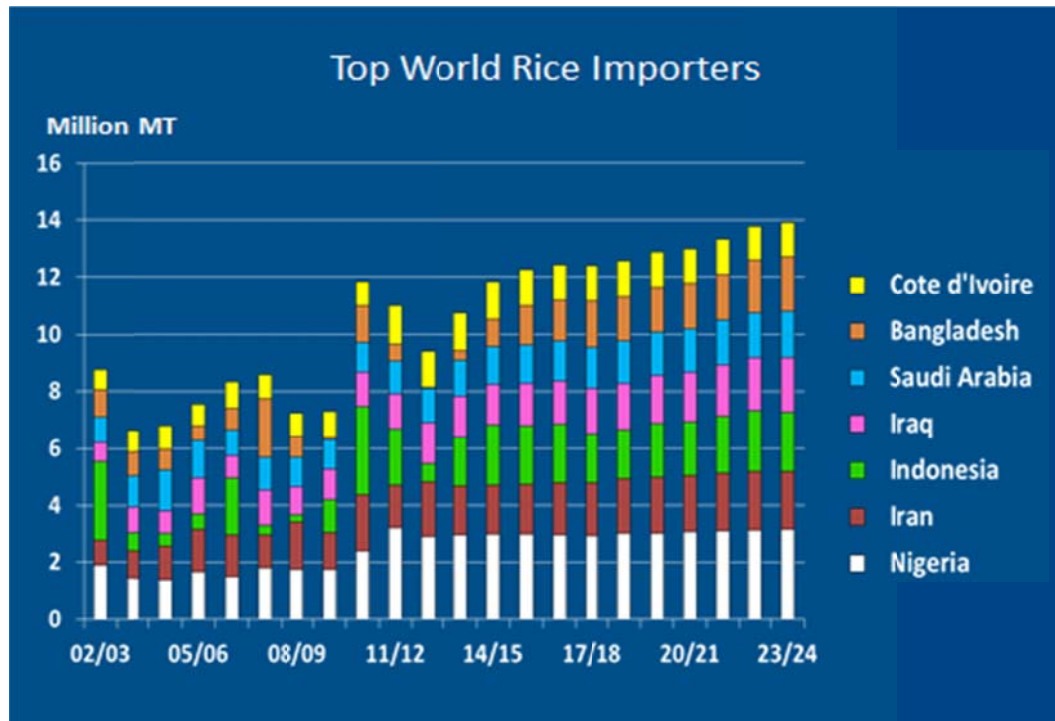


Figure 11 Rice imports by top countries, Historical and Projected.

- By world regions, the top rice importers are shown in Figures 12 and 13.

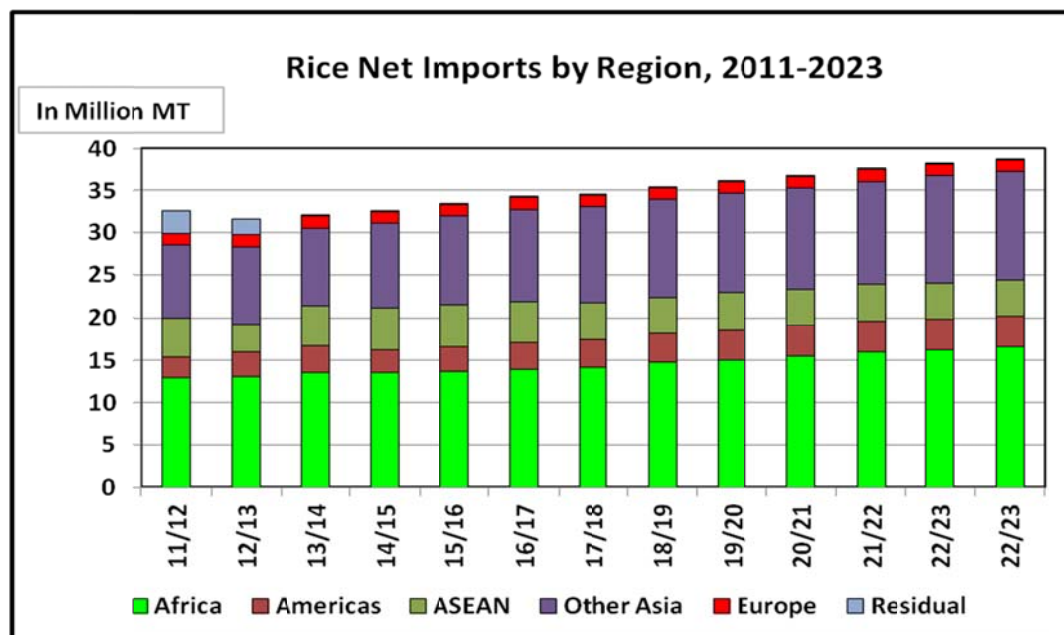


Figure 12 Net Rice Imports by World Regions, Historical and Projected.

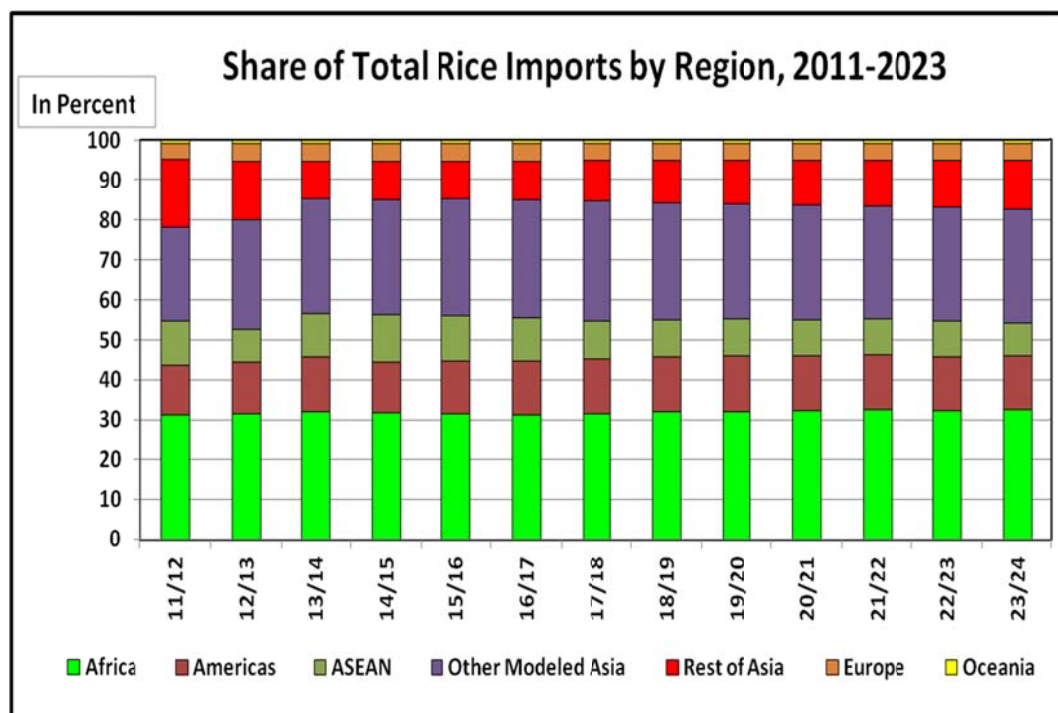


Figure 13 Shares of total rice imports by world regions, Historical and Projected.

Rice Harvested Area and Production

- The global rice major producers are shown in Figure 14. While the global rice harvested area will grow by nearly 5.0 million hectares on a net basis over the baseline period, some notable changes are projected for a number of countries. There is a total expansion of 4.0 million hectares of rice in the five countries of Nigeria, India, Pakistan, Bangladesh, and Myanmar combined; and a total expansion of 2.0 million hectares in ECOWAS. However, the rice area of the PRC is projected to decline by nearly 1.0 million hectares due to a shift to substitute crops and irrigation constraints.
- The U.S. rice area is projected to remain relatively flat over the projection period at around 1.1 million hectares (or 2.7 million acres) due to water constraints and an increasingly competitive market environment. Other constraints to potential rice expansion include competing uses of limited land and water; farm demographics—with farmers getting older and labor moving from farm to cities; uncertain calamities due climate change; changing consumer tastes towards healthy foods; and emerging environmental issues on rice carbon footprint.
- The global milled rice output is projected to grow by a total of 51.1 mmt over the period 2012-2023. By volume, about 27% of the expected growth over the same period will come from India; nearly 44% from the seven countries of PRC, Bangladesh, Indonesia, Cambodia, Myanmar, the Philippines and Vietnam combined; and 11% from ECOWAS. Total U.S. rice production is projected to increase by about 573 thousand mt (or 17.3 mil. cwt) over the same period with slight gains in area and yields.

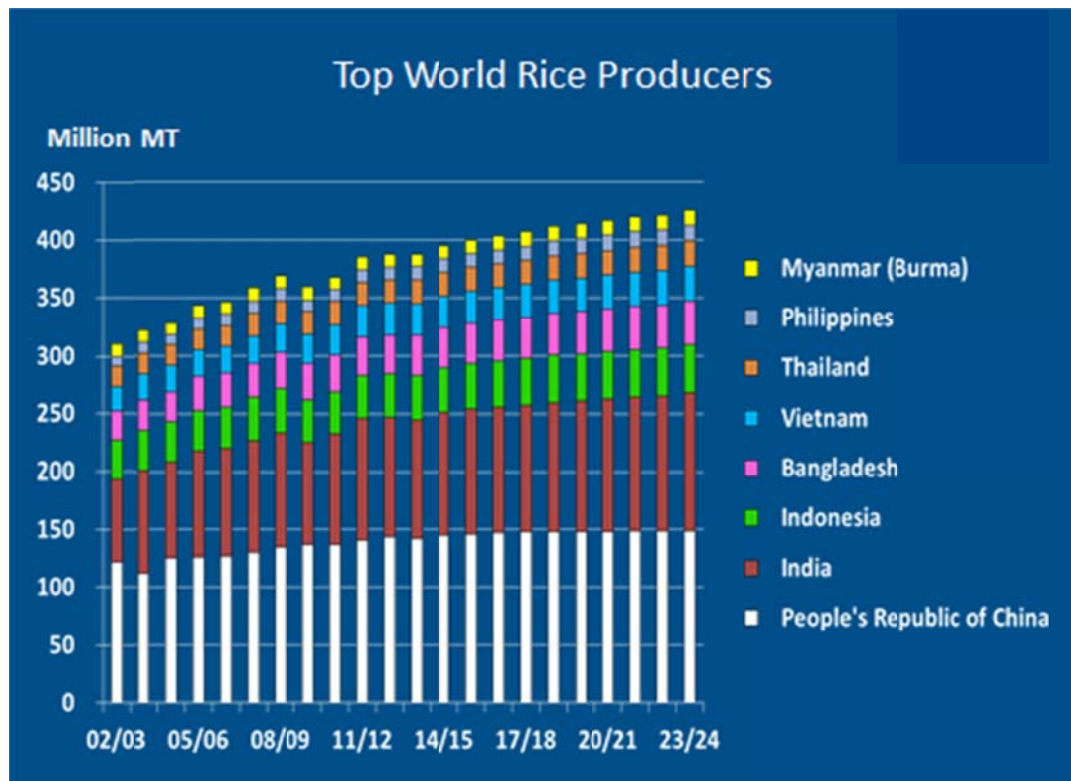


Figure 14 Top world rice producing countries, Historical and Projected.

Rice Domestic Consumption

- Rice consumption is driven by income, population, and other demographic variables. Rising incomes dampen rice demand in some Asian countries where rice is considered an inferior good. Demographic trends also weaken rice demand as aging populations and increasing health consciousness shift preferences away from carbohydrates and towards protein-based diets.
- Over the projection period, global rice consumption will grow by 56.0 mmt (net)—with nearly 31% accounted for by India; about 30% by the five countries of Bangladesh, Indonesia, PRC, the Philippines, and Vietnam combined; and 11% by ECOWAS. The top world rice consuming countries are shown in Figure 15.
- While PRC’s rice per capita use continues to decline at 0.30% per year, the country’s population grows at 0.44% annually-- resulting in net growth in total rice consumption of 0.14% annually, reaching 147.4 mmt in 2023. U.S. total rice consumption increases by nearly 847 thousand mt (or 15.1 mil. cwt) over the same period, with annual growth rates of 1.26% in per capita use and 0.76% in population.

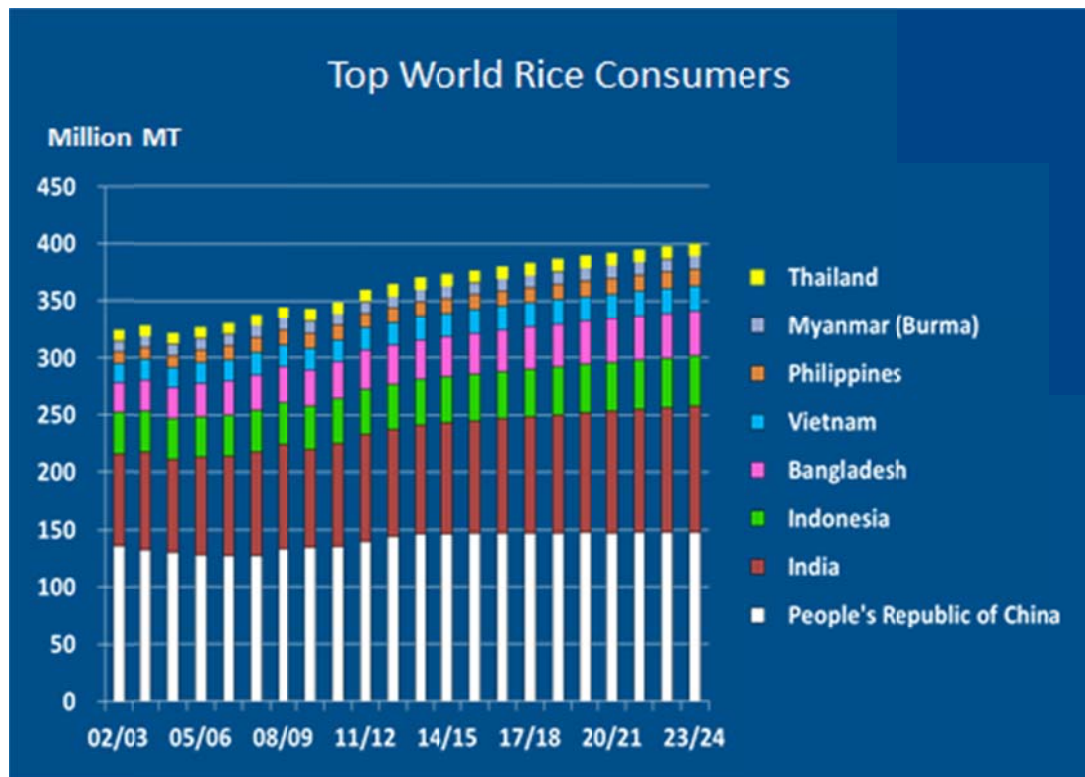


Figure 15 Top World rice consuming countries, Historical and Projected.

Rice Global Stocks

- Global rice stocks expand by 39 mmt over the projection period, from 107 mmt in 2012 to 146 mmt in 2023, with the stocks-to-use ratio increasing from 0.23 to 0.28 over the same period.
- Two countries account for over 90% of this rice global stock build-up, with PRC accounting for 58%, as the country takes advantage of low global prices and maintains its strong rice purchases; and Thailand, accounting for 35%, as the country continues producer subsidies and faces challenges in releasing its excessive rice stockpile onto the global market. See Figure 16 for the world's leaders in rice stockholdings.



Figure 16 Top countries of rice ending stocks, Historical and Projected.

Rice Supply and Demand by World Region

- The summary results for the five world regions are presented in Tables 48-64. Three tables are associated with each region. The first one is the total for the region, which is the sum of individually-modeled countries in the region and the other countries in the region modeled as a group. Thus, the sum of the five regions covers the entire world rice economy.
- A more detailed look at the regional projections provides a better understanding of the geographical dynamics and the relative importance of each region to the global rice economy.

Africa

- Table 48 shows that Africa’s total rice output is projected to grow by 3.5% per year, driven by both growth in area (1.8%) and yields (1.6%). This expected productivity improvement is supported by availability of increased research funding from institutions and NGOs, a more focused efforts by the Africa Rice Center and the International Rice Research Institute (IRRI), and a possible expanded distribution and adoption of improved rice varieties like the recently-developed New Rice for Africa (NERICA) cultivars. The region’s total rice consumption grows

by 3.0% per year as population grows by 2.3% and per capita use by 0.8% annually. This consumption is supported by 2.8% growth in real per capita income³.

- Table 49 presents the results for the group of individually-modeled African countries in AGRM. This group is expected to grow total rice production by 3.7% per year, as area and yields grow by 2.2% and 1.5%, respectively. Total consumption of this group gains 3.1% annually, driven by 2.2% growth in population, 0.9% growth in per capita use, and 2.9% growth in real per capita income.
- Table 50 shows that the “Other Africa” region (or the rest of African countries that are modeled as a group) expands its rice output by 2.5% per year, with 0.6% coming from growth in area and 1.9% from yield. Total consumption of this group expands at 2.8% per year, of which 2.3% comes from population growth and 0.5% from per capita use gain, supported by 2.6% gain in real per capita income.

Americas

- Total rice production of the Western Hemisphere (Table 51) grows at 1.2% per year all of which comes from 0.4% yield growth and area gain of 0.8% annually. Total consumption increases at 1.5% annually, a combined effect of 0.9% population growth and 0.6% gain in per capita use with 1.8% growth in real per capita income.
- The group of individually-modeled Western Hemisphere countries (Table 52) is projected to grow total rice output slightly by 1.0% per year, as area gains 0.4% and yields grow by 0.6%. Total rice consumption of this group gains 1.3% annually, with 0.8% contributed by population growth and 0.5% by per capita use as real per capita income gains 2.1% per year.
- Total rice production of the “Other Western Hemisphere” region modeled as a group (Table 53) increases by 1.6% per year, with 0.2% coming from area expansion and 1.4% from yield gain. Total consumption of this group grows at 1.8% per year, of which 1.2% comes from population growth and 0.6% from per capita use. Real per capita income contracts by 0.8% annually.

Asia

- Total rice production of Asia (Table 54) increases by 0.9% per year, as yield grows by 0.8% annually and area increases marginally (0.1%). The growth in total Asian consumption of 0.8% per year comes solely from population growth, as per capita use declines by nearly 0.1% annually. Rice is an inferior good in most Asian countries and the relatively strong projected growth of 4.0% in real per capita income has dampening effect on rice consumption.

³ Real per capita income is computed by dividing total real gross domestic product by population.

- Similarly, the group of individually-modeled Asian countries (Table 55) is projected to grow total rice production by 0.9% annually, as yields increase by 0.8% and area harvested gains slightly by 0.1%. Total rice consumption of this group grows by 0.8% annually, all contributed by population growth as per capita use declines marginally with 4.1% annual gain in real per capita income.
- The net growth of total rice output of the “Other Asia” region modeled as a group (Table 56) is 0.7% annually, with area growing by 0.3% and yield gaining 0.4% per year. Total consumption of this group grows at 1.2% per year, of which 1.4% comes from population growth as per capita use declines by 0.2% and real per capita income grows at 2.8% which is relatively slower than that of the group of modeled Asia countries.

Europe

- The total rice production of Europe (Table 57) grows at 1.6% per year of which 1.2% comes from yield growth and 0.4% from a slight gain in area. Total consumption increases slightly at 0.6%, solely from gain in per capita use, as population growth is flat. Real per capita income is up 2.0% per year.
- The group of individually-modeled European countries (Table 58) is projected to grow total rice output slightly by 1.9% per year, as area increases by 0.6% and yields grow by 1.3% per year. Total consumption of this group gains 0.5% annually, with population and per capita use accounting for 0.2% and 0.3%, respectively. Real per capita income of this group grows at 1.6% per year.
- Total rice production of the “Other Europe” region modeled as a group (Table 59) grows slightly by 0.2% per year, as yield grows by 0.4% and yield contracts by 0.2%. Consumption of this group grows by 1.3% annually, solely from per capita use growth. The real per capita income of this group grows strongly at 3.8% per year.

Oceania

- Tables 60 thru 62 show the results for Oceania which mainly consists of Australia. Total rice production expands by 0.6% per year, solely from gain in area harvested. Total consumption grows nearly 2.0% annually attributed to 1.3% population growth and 0.6% per capita use gain. Real per capita income grows at 1.5% annually.

World

- Tables 63 thru 65 present the sum of the world regions.

ECOWAS

- Production is projected to grow by 5.2% per annum with equal contributions from harvested area and yield improvements (Table 66). Consumption, fueled by population and income growth, increases by 3.2% annually; and net imports expand by 1.38% per year.

Results of Stochastic Baseline Analysis

Detailed Results of the Stochastic Baseline Analysis

The detailed results of the stochastic analyses for selected variables and countries are presented in Figures 17a thru 33. In order to show the direction and dispersion of the stochastic outcome distribution, four selected outcome items (stochastic average, 10th percentile, 90th percentile, and the coefficient of variation (C.V.) for selected variables are presented. Intuitively, the gap between the two percentiles (10th and 90th) indicates volatility or risk. Widening indicates increased volatility and narrowing indicates decreased volatility.

Another measure of dispersion of data points in a data series, such as each of the resulting probability distributions in this study, is the coefficient of variation (C.V.) which shows the extent of variability in relation to the mean. It is computed by dividing the standard deviation by the mean. The lower the C.V. is, the better it is because it indicates more stability, i.e., less risk.

The information projected in each one of the charts is similar in principle. Hence, for space consideration only one representative chart (Figure 17) will be discussed--which can then be used as a pattern in understanding the rest of the charts.

Figure 17 shows the long grain rice international reference price. For 2014, while the mean price is \$404 per metric ton (mt), the stochastic distribution indicates that 10% of the time the average price will be higher than \$463 per mt and lower than \$352 per mt 10% of the time. The gap between the two percentiles is \$111; and the gap varies across the estimation period. The computed C.V. for 2014 is 11.2%.

Going forward to 2023, while the mean price is \$416 per mt, the stochastic distribution indicates that 10% of the time the average price will be higher than \$489 per mt and lower than \$360 per mt 10% of the time. This time the gap between the two percentiles is wider at \$129, with C.V. of 12.4%.

Again, a similar analysis can be made for the rest of the stochastic results for the other selected variables presented. The same principle holds—with the difference lying only with varying units and absolute

numbers. This feature of the stochastic analysis provides an advantage as it indicates how the outcomes are distributed, thus providing information on risk and uncertainty which is an innate characteristic of agricultural commodity enterprises and markets, such as that of rice. Thus, the stochastic analysis complements the basic information generated by the deterministic analysis by providing a better understanding of the dynamics of the global rice market.

Conclusions and Summary

- The general assessment of the global rice economy in this baseline over the next decade indicates that, under assumed normal average weather conditions, the world is projected to face abundant rice supplies due to current surpluses; increased productivity and use of modern growing and processing technologies; and focus on self-sufficiency in rice---all pointing to a most likely environment of relatively low and stable global rice prices.
- As in any other enterprise, however, there are risks involved in the rice industry due to the uncertainties of weather, domestic policies, political developments, and other unexpected events. The probable upper and lower bounds (confidence intervals) of future distribution of outcomes are indicated in the stochastic analysis included in this report. This information can serve as useful guide for various stakeholders in the rice industry.

Estimates of the Deterministic Baseline Analysis

Tables and Charts of Rice Supply, Utilization and Net Trade, 2013-2023

Table 1 World Rice Net Trade by Country and International Reference Prices, 2013-2023

	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24
Net Exporters	(Thousand Metric Tons)										
Argentina	574	606	638	656	713	755	783	827	871	916	948
Australia	373	398	407	438	445	447	456	441	459	458	421
Cambodia	1,007	1,146	1,342	1,581	1,641	1,880	1,997	2,105	2,224	2,306	2,375
People's Republic of China	-3,050	-2,504	-2,322	-2,268	-2,138	-2,043	-1,971	-1,975	-1,783	-1,711	-1,616
Egypt	839	870	920	939	992	987	984	971	968	970	984
India	10,029	9,647	9,324	9,149	8,886	8,733	8,564	8,374	8,059	8,088	7,987
Myanmar (Burma)	677	701	774	996	1,153	1,218	1,169	1,163	1,207	1,250	1,259
Pakistan	3,349	3,525	3,748	3,833	3,571	3,558	3,563	3,649	3,712	3,769	3,834
Thailand	7,761	7,648	7,777	7,989	8,192	8,711	9,264	9,776	10,294	10,660	10,973
United States	2,407	2,305	2,298	2,337	2,395	2,330	2,334	2,366	2,372	2,316	2,328
Uruguay	910	928	944	969	984	993	997	999	1,003	1,015	1,038
Vietnam	7,116	7,259	7,509	7,509	7,637	7,738	7,911	7,962	8,090	8,176	8,225
Total Net Exports *	31,991	32,528	33,360	34,129	34,470	35,308	36,051	36,659	37,476	38,214	38,756
Net Importers											
Bangladesh	313	961	1,376	1,418	1,636	1,573	1,575	1,590	1,594	1,855	1,918
Brazil	-84	-337	-363	-314	-347	-330	-310	-272	-253	-247	-217
Brunei Darussalam	47	48	49	50	51	53	54	55	56	57	58
Cameroon	528	488	485	488	502	505	520	545	543	551	533
Canada	358	376	420	435	448	461	471	481	491	500	514
China - Hong Kong	438	445	447	453	458	463	468	473	477	481	494
Colombia	276	325	342	386	405	422	425	423	421	426	427
Cote d'Ivoire	1,330	1,329	1,265	1,246	1,248	1,255	1,229	1,223	1,247	1,193	1,207
European Union-27	1,132	1,155	1,147	1,148	1,142	1,134	1,128	1,104	1,092	1,085	1,059
Ghana	600	631	653	672	696	757	773	807	824	835	854
Guinea	259	269	225	217	218	235	228	237	266	257	276
Indonesia	1,717	2,117	2,074	2,052	1,715	1,701	1,897	1,874	2,011	2,137	2,085
Iran	1,720	1,710	1,731	1,839	1,862	1,921	1,961	1,962	2,008	2,045	2,045
Iraq	1,446	1,438	1,481	1,534	1,595	1,647	1,696	1,747	1,803	1,856	1,908
Japan	482	482	482	482	482	482	482	482	482	482	482
Kenya	449	461	533	549	587	662	711	762	801	830	863
Lao PDR	15	-23	-25	-31	-68	-101	-137	-170	-196	-234	-235
Liberia	240	246	257	286	303	327	339	357	375	382	406
Malaysia	1,131	1,065	1,066	1,091	1,118	1,141	1,166	1,191	1,222	1,240	1,262
Mali	158	138	45	15	-52	-64	-90	-96	-108	-144	-143
Mexico	747	750	762	777	797	819	839	860	878	888	890

Mozambique	533	472	507	509	520	558	574	621	654	705	729
Nigeria	2,944	2,984	2,987	2,945	2,924	3,015	3,012	3,083	3,109	3,121	3,144
Philippines	1,474	1,412	1,406	1,345	1,220	1,146	1,064	969	848	762	649
Saudi Arabia	1,272	1,311	1,355	1,401	1,437	1,467	1,501	1,531	1,560	1,584	1,611
Senegal	1,092	1,048	1,075	1,082	1,087	1,100	1,105	1,112	1,114	1,114	1,115
Sierra Leone	353	353	349	352	341	337	331	322	315	298	286
Singapore	361	364	372	375	376	377	378	378	377	375	386
South Africa	949	931	930	943	952	968	962	976	1,004	994	1,035
South Korea	410	409	409	409	409	409	409	409	409	409	409
Taiwan	123	123	123	123	123	123	123	123	123	123	123
Tanzania	236	277	302	298	315	352	369	400	444	469	494
Turkey	280	281	287	282	298	301	269	275	286	282	280
Other Africa	2,732	2,775	2,864	3,025	3,183	3,306	3,415	3,475	3,608	3,683	3,750
Other Americas	1,847	1,556	1,755	1,830	1,899	1,951	2,060	2,068	2,052	1,994	1,953
Other Asia	2,632	2,754	2,697	2,854	2,930	3,044	3,148	3,220	3,336	3,462	3,539
Other Europe	299	241	239	257	253	265	269	277	302	324	347
Other Oceania	259	274	287	300	313	326	339	352	364	376	388
Ecowas-7	1,111	1,126	1,196	1,269	1,363	1,467	1,577	1,698	1,819	1,947	2,081
Residual	-223	-235	-236	-264	-269	-268	-277	-262	-283	-282	-245
Total Net Imports	31,991	32,528	33,360	34,129	34,470	35,308	36,051	36,659	37,476	38,214	38,756

Rice Prices

(U.S. Dollars per Metric Ton)

International Reference Price	393	401	402	403	403	404	404	406	407	410	412
U.S. FOB Gulf Ports	606	559	545	532	517	519	511	511	509	498	494
U.S. No. 2 Medium FOB CA	636	670	680	688	693	698	704	711	718	722	728

*Total net exports are the sum of all positive net exports and negative net imports.

Table 2 World Rice Supply, Utilization, Total Trade and Stocks-to Use, 2013-2023.

	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24
	(Thousand Hectares)										
Area Harvested	160,418	160,457	161,152	161,436	161,700	161,949	162,076	162,251	162,472	162,511	162,644
	(Metric Tons per Hectare)										
Yield	2.95	3.00	3.03	3.06	3.08	3.11	3.13	3.16	3.18	3.20	3.23
	(Thousand Metric Tons)										
Production	473,470	482,068	488,336	493,434	498,201	503,971	507,689	512,154	516,374	519,523	525,080
Beginning Stocks	107,200	106,526	110,363	115,368	120,285	124,955	129,905	133,721	137,602	140,941	143,015
Domestic Supply	580,669	588,594	598,698	608,802	618,486	628,926	637,594	645,874	653,975	660,464	668,095
Consumption	474,370	478,466	483,566	488,781	493,799	499,290	504,151	508,534	513,317	517,731	521,877
Ending Stocks	106,526	110,363	115,368	120,285	124,955	129,905	133,721	137,602	140,941	143,015	146,464
Domestic Use	580,896	588,829	598,935	609,066	618,755	629,195	637,871	646,136	654,258	660,746	668,341
Total Trade	39,614	39,795	40,462	41,236	41,505	42,309	42,995	43,652	44,300	44,971	45,437
	(Percent)										
Stocks-to-Use Ratio	22.46	23.07	23.86	24.61	25.30	26.02	26.52	27.06	27.46	27.62	28.06

Table 3 U.S. Rice Supply, Utilization, Net Trade and Farm Prices, 2013-2023.

	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24
	(Thousand Hectares)										
Area Harvested	999	1,060	1,072	1,082	1,091	1,100	1,118	1,125	1,113	1,106	1,100
	(Metric Tons per Hectares)										
Yield	6.02	6.05	6.08	6.11	6.13	6.15	6.17	6.20	6.23	6.25	6.28
	(Thousand Metric Tons)										
Production	6,013	6,415	6,517	6,608	6,691	6,769	6,903	6,972	6,934	6,917	6,909
Beginning Stocks	1,156	923	1,025	1,140	1,230	1,220	1,242	1,272	1,309	1,294	1,215
Domestic Supply	7,169	7,338	7,542	7,749	7,921	7,989	8,145	8,244	8,242	8,211	8,125
Consumption	3,843	4,008	4,104	4,182	4,305	4,416	4,540	4,569	4,576	4,680	4,599
Ending Stocks	923	1,025	1,140	1,230	1,220	1,242	1,272	1,309	1,294	1,215	1,198
Domestic Use	4,766	5,033	5,244	5,412	5,525	5,659	5,812	5,878	5,871	5,895	5,797
Net Trade	2,407	2,305	2,298	2,337	2,395	2,330	2,334	2,366	2,372	2,316	2,328
U.S. Rice Farm Prices	(U.S. Dollars per Cwt)										
Season Average Farm Price	15.44	14.42	14.31	14.21	13.63	13.69	13.56	13.52	13.48	13.44	13.47
Long Grain Farm Price	14.92	13.92	13.73	13.52	12.75	12.81	12.67	12.62	12.51	12.43	12.42
Medium Grain Farm Price	16.63	15.57	15.65	15.79	15.62	15.71	15.61	15.61	15.69	15.71	15.78

Table 4 Argentina Rice Supply, Utilization and Net Trade, 2013-2023

	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24
					(Thousand Hectares)						
Area Harvested	232	236	240	246	252	259	263	270	276	284	289
					(Metric Tons per Hectares)						
Yield	4.20	4.34	4.49	4.56	4.63	4.67	4.71	4.76	4.80	4.85	4.89
					(Thousand Metric Tons)						
Production	975	1,023	1,077	1,121	1,166	1,208	1,239	1,282	1,328	1,376	1,411
Beginning Stocks	194	164	146	149	173	181	185	189	188	187	186
Domestic Supply	1,169	1,186	1,223	1,269	1,338	1,388	1,424	1,471	1,516	1,563	1,597
Consumption	431	434	437	441	445	448	452	455	458	461	464
Ending Stocks	164	146	149	173	181	185	189	188	187	186	185
Domestic Use	595	580	586	614	626	633	641	643	645	647	649
Net Trade	574	606	638	656	713	755	783	827	871	916	948

Table 5 Australia Rice Supply, Utilization and Net Trade, 2013-2023

	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24
					(Thousand Hectares)						
Area Harvested	99	106	112	114	115	115	115	114	115	115	115
					(Metric Tons per Hectares)						
Yield	7.07	7.05	7.04	7.03	7.04	7.05	7.05	7.07	7.10	7.11	7.11
					(Thousand Metric Tons)						
Production	702	750	789	800	807	810	809	808	816	817	817
Beginning Stocks	120	87	88	115	124	131	134	126	131	124	115
Domestic Supply	822	838	877	915	931	940	943	934	947	942	932
Consumption	362	352	355	353	355	359	360	362	363	368	375
Ending Stocks	87	88	115	124	131	134	126	131	124	115	136
Domestic Use	449	439	470	477	486	493	487	493	487	483	511
Net Trade	373	398	407	438	445	447	456	441	459	458	421

Table 6 Bangladesh Rice Supply, Utilization and Net Trade, 2013-2023

	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24
					(Thousand Hectares)						
Area Harvested	11,770	11,731	11,856	11,943	11,990	12,116	12,150	12,158	12,183	12,185	12,219
					(Metric Tons per Hectares)						
Yield	2.92	2.92	2.92	2.94	2.97	3.00	3.02	3.05	3.08	3.09	3.12
					(Thousand Metric Tons)						
Production	34,412	34,269	34,638	35,145	35,598	36,317	36,725	37,103	37,511	37,679	38,068
Beginning Stocks	722	773	784	800	811	824	838	846	854	862	871
Domestic Supply	35,134	35,043	35,422	35,945	36,409	37,141	37,562	37,949	38,365	38,541	38,938
Consumption	34,674	35,220	35,998	36,552	37,221	37,876	38,291	38,685	39,097	39,526	39,976
Ending Stocks	773	784	800	811	824	838	846	854	862	871	880
Domestic Use	35,448	36,004	36,798	37,363	38,045	38,714	39,137	39,539	39,959	40,396	40,856
Net Trade*	-313	-961	-1,376	-1,418	-1,636	-1,573	-1,575	-1,590	-1,594	-1,855	-1,918

*In this table and the rest of the tables, negative net trade means net imports, as opposed to positive net trade which means net exports.

Table 7 Brazil Rice Supply, Utilization and Net Trade, 2013-2023

	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24
					(Thousand Hectares)						
Area Harvested	2,421	2,424	2,425	2,430	2,435	2,437	2,438	2,438	2,443	2,445	2,449
					(Metric Tons per Hectares)						
Yield	3.39	3.40	3.42	3.43	3.46	3.48	3.49	3.50	3.51	3.52	3.53
					(Thousand Metric Tons)						
Production	8,217	8,249	8,304	8,344	8,417	8,474	8,502	8,528	8,581	8,606	8,646
Beginning Stocks	680	826	835	836	835	832	828	824	820	816	813
Domestic Supply	8,897	9,075	9,139	9,180	9,252	9,306	9,330	9,352	9,402	9,422	9,460
Consumption	7,987	7,903	7,939	8,031	8,073	8,148	8,195	8,260	8,332	8,362	8,432
Ending Stocks	826	835	836	835	832	828	824	820	816	813	810
Domestic Use	8,813	8,738	8,775	8,866	8,905	8,976	9,019	9,080	9,148	9,175	9,242
Net Trade	84	337	363	314	347	330	310	272	253	247	217

Table 8 Brunei Darussalam Rice Supply, Utilization and Net Trade, 2013-2023

	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24
	(Thousand Hectares)										
Area Harvested	5	5	5	5	5	5	5	5	5	5	5
	(Metric Tons per Hectares)										
Yield	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
	(Thousand Metric Tons)										
Production	1	1	1	1	1	1	1	1	1	1	1
Beginning Stocks	0	0	0	0	0	0	0	0	0	0	0
Domestic Supply	1	1	1	1	1	1	1	1	1	1	1
Consumption	48	49	50	51	52	54	55	56	57	58	59
Ending Stocks	0	0	0	0	0	0	0	0	0	0	0
Domestic Use	48	49	50	51	52	54	55	56	57	58	59
Net Trade	-47	-48	-49	-50	-51	-53	-54	-55	-56	-57	-58

Table 9 Cambodia Rice Supply, Utilization and Net Trade, 2013-2023

	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24
	(Thousand Hectares)										
Area Harvested	2,975	2,961	2,969	2,992	3,006	3,018	3,025	3,034	3,045	3,037	3,041
	(Metric Tons per Hectares)										
Yield	1.65	1.70	1.78	1.87	1.91	2.00	2.06	2.12	2.17	2.23	2.27
	(Thousand Metric Tons)										
Production	4,918	5,027	5,296	5,606	5,738	6,045	6,228	6,417	6,614	6,773	6,917
Beginning Stocks	196	301	304	307	310	312	315	318	321	324	327
Domestic Supply	5,114	5,328	5,600	5,913	6,047	6,357	6,543	6,734	6,935	7,097	7,243
Consumption	3,806	3,878	3,951	4,022	4,094	4,162	4,229	4,309	4,387	4,464	4,539
Ending Stocks	301	304	307	310	312	315	318	321	324	327	330
Domestic Use	4,108	4,182	4,258	4,332	4,406	4,477	4,547	4,629	4,711	4,790	4,868
Net Trade	1,007	1,146	1,342	1,581	1,641	1,880	1,997	2,105	2,224	2,306	2,375

Table 10 Cameroon Rice Supply, Utilization and Net Trade, 2013-2023

	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24
	(Thousand Hectares)										
Area Harvested	140	140	145	147	149	152	156	157	160	163	167
	(Metric Tons per Hectares)										
Yield	0.90	0.97	1.07	1.08	1.08	1.09	1.08	1.08	1.09	1.09	1.09
	(Thousand Metric Tons)										
Production	127	136	155	159	162	166	168	170	173	177	182
Beginning Stocks	0	24	24	25	25	26	26	26	27	28	28
Domestic Supply	127	160	179	184	187	191	194	197	201	205	210
Consumption	630	624	639	647	663	671	687	714	716	728	716
Ending Stocks	24	24	25	25	26	26	26	27	28	28	28
Domestic Use	655	648	664	672	689	696	714	742	744	756	744
Net Trade	-528	-488	-485	-488	-502	-505	-520	-545	-543	-551	-533

Table 11 Canada Rice Utilization and Net Trade, 2013-2023

	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24
	(Thousand Metric Tons)										
Consumption	358	376	420	435	448	461	471	481	491	500	514
Ending Stocks	0	0	0	0	0	0	0	0	0	0	0
Domestic Use	358	376	420	435	448	461	471	481	491	500	514
Net Trade	-358	-376	-420	-435	-448	-461	-471	-481	-491	-500	-514

Table 12 People's Republic of China Rice Supply, Utilization and Net Trade, 2013-2023

	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24
	(Thousand Hectares)										
Area Harvested	30,386	30,170	30,089	30,073	30,014	29,884	29,671	29,561	29,445	29,272	29,149
	(Metric Tons per Hectares)										
Yield	4.67	4.80	4.85	4.88	4.92	4.95	4.99	5.01	5.04	5.07	5.10
	(Thousand Metric Tons)										
Production	141,811	144,907	145,879	146,884	147,560	147,976	147,909	148,143	148,394	148,448	148,687
Beginning Stocks	46,782	45,361	46,256	47,657	49,826	52,521	55,431	57,991	60,942	63,719	66,443
Domestic Supply	188,593	190,268	192,136	194,541	197,386	200,497	203,340	206,134	209,336	212,167	215,130
Consumption	146,282	146,516	146,800	146,983	147,003	147,109	147,320	147,167	147,400	147,435	147,363
Ending Stocks	45,361	46,256	47,657	49,826	52,521	55,431	57,991	60,942	63,719	66,443	69,384
Domestic Use	191,643	192,772	194,457	196,809	199,524	202,540	205,311	208,109	211,119	213,878	216,747
Net Trade	-3,050	-2,504	-2,322	-2,268	-2,138	-2,043	-1,971	-1,975	-1,783	-1,711	-1,616

Table 13 Colombia Rice Supply, Utilization and Net Trade, 2013-2023

	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24
	(Thousand Hectares)										
Area Harvested	441	448	452	454	456	457	458	458	458	458	459
	(Metric Tons per Hectares)										
Yield	2.99	3.00	3.01	3.02	3.04	3.05	3.07	3.08	3.10	3.11	3.12
	(Thousand Metric Tons)										
Production	1,318	1,341	1,360	1,373	1,386	1,396	1,405	1,411	1,418	1,425	1,432
Beginning Stocks	78	131	226	305	337	348	344	340	341	347	349
Domestic Supply	1,396	1,473	1,586	1,678	1,723	1,744	1,749	1,751	1,759	1,772	1,781
Consumption	1,541	1,571	1,623	1,727	1,780	1,823	1,834	1,833	1,832	1,848	1,855
Ending Stocks	131	226	305	337	348	344	340	341	347	349	352
Domestic Use	1,672	1,797	1,928	2,064	2,128	2,166	2,174	2,174	2,179	2,197	2,207
Net Trade	-276	-325	-342	-386	-405	-422	-425	-423	-421	-426	-427

Table 14 Cote D'Ivoire Rice Supply, Utilization and Net Trade, 2013-2023

	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24
	(Thousand Hectares)										
Area Harvested	452	454	458	474	491	507	519	533	551	568	576
	(Metric Tons per Hectare)										
Yield	1.23	1.33	1.43	1.47	1.51	1.55	1.59	1.63	1.67	1.71	1.75
	(Thousand Metric Tons)										
Production	555	605	654	697	739	786	823	870	918	973	1,007
Beginning Stocks	320	326	335	334	338	346	356	356	358	366	364
Domestic Supply	875	931	989	1,031	1,077	1,132	1,180	1,226	1,277	1,340	1,371
Consumption	1,879	1,925	1,920	1,939	1,979	2,031	2,053	2,091	2,157	2,169	2,210
Ending Stocks	326	335	334	338	346	356	356	358	366	364	367
Domestic Use	2,205	2,260	2,254	2,277	2,325	2,387	2,409	2,449	2,524	2,532	2,577
Net Trade	-1,330	-1,329	-1,265	-1,246	-1,248	-1,255	-1,229	-1,223	-1,247	-1,193	-1,207

Table 15 Egypt Rice Supply, Utilization and Net Trade, 2013-2023

	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24
	(Thousand Hectares)										
Area Harvested	801	764	763	763	759	759	759	761	762	761	767
	(Metric Tons per Hectares)										
Yield	6.48	6.69	6.77	6.8	6.83	6.86	6.88	6.94	7	7.06	7.12
	(Thousand Metric Tons)										
Production	5,188	5,111	5,165	5,186	5,185	5,206	5,224	5,283	5,335	5,373	5,459
Beginning Stocks	462	725	901	1,044	1,111	1,074	997	920	855	821	803
Domestic Supply	5,650	5,836	6,066	6,230	6,295	6,279	6,221	6,203	6,189	6,193	6,262
Consumption	4,086	4,065	4,101	4,180	4,230	4,296	4,317	4,378	4,401	4,420	4,535
Ending Stocks	725	901	1,044	1,111	1,074	997	920	855	821	803	743
Domestic Use	4,811	4,966	5,146	5,291	5,304	5,293	5,237	5,233	5,221	5,224	5,278
Net Trade	839	870	920	939	992	987	984	971	968	970	984

Table 16 EU-27 Rice Supply, Utilization and Net Trade, 2013-2023

	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24
					(Thousand Hectares)						
Area Harvested	456	458	461	464	468	471	473	476	478	481	481
					(Metric Tons per Hectare)						
Yield	4.62	4.67	4.74	4.81	4.88	4.94	5.01	5.08	5.14	5.21	5.25
					(Thousand Metric Tons)						
Production	2,104	2,138	2,185	2,234	2,283	2,326	2,370	2,416	2,461	2,506	2,523
Beginning Stocks	1,055	903	786	689	619	581	568	576	591	627	684
Domestic Supply	3,159	3,041	2,971	2,923	2,902	2,907	2,938	2,991	3,052	3,133	3,208
Consumption	3,389	3,410	3,429	3,451	3,463	3,472	3,490	3,504	3,517	3,534	3,546
Ending Stocks	903	786	689	619	581	568	576	591	627	684	721
Domestic Use	4,291	4,196	4,118	4,071	4,044	4,041	4,066	4,095	4,145	4,218	4,267
Net Trade	-1,132	-1,155	-1,147	-1,148	-1,142	-1,134	-1,128	-1,104	-1,092	-1,085	-1,059

Table 17 Ghana Rice Supply, Utilization and Net Trade, 2013-2023

	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24
					(Thousand Hectares)						
Area Harvested	194	197	205	213	223	235	247	256	267	280	296
					(Metric Tons per Hectares)						
Yield	1.69	1.72	1.75	1.8	1.85	1.89	1.94	1.96	2	2.04	2.08
					(Thousand Metric Tons)						
Production	329	338	360	384	412	445	479	503	535	572	616
Beginning Stocks	132	135	142	151	159	170	187	198	210	220	229
Domestic Supply	461	473	502	535	572	615	666	701	744	792	846
Consumption	926	962	1,004	1,047	1,098	1,185	1,241	1,298	1,349	1,397	1,458
Ending Stocks	135	142	151	159	170	187	198	210	220	229	242
Domestic Use	1,061	1,104	1,155	1,207	1,268	1,373	1,439	1,508	1,568	1,627	1,700
Net Trade	-600	-631	-653	-672	-696	-757	-773	-807	-824	-835	-854

Table 18 Guinea Rice Supply, Utilization and Net Trade, 2013-2023

	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24
	(Thousand Hectares)										
Area Harvested	1,001	1,001	1,002	1,004	1,008	1,007	1,016	1,018	1,019	1,020	1,020
	(Metric Tons per Hectares)										
Yield	1.27	1.34	1.4	1.46	1.5	1.54	1.58	1.62	1.65	1.69	1.72
	(Thousand Metric Tons)										
Production	1,275	1,338	1,405	1,462	1,509	1,549	1,606	1,653	1,682	1,728	1,757
Beginning Stocks	105	85	87	88	90	91	94	95	98	100	101
Domestic Supply	1,380	1,423	1,492	1,550	1,598	1,640	1,700	1,748	1,780	1,828	1,859
Consumption	1,555	1,605	1,629	1,677	1,725	1,781	1,832	1,887	1,946	1,984	2,031
Ending Stocks	85	87	88	90	91	94	95	98	100	101	103
Domestic Use	1,640	1,692	1,717	1,767	1,816	1,875	1,928	1,985	2,046	2,085	2,134
Net Trade	-259	-269	-225	-217	-218	-235	-228	-237	-266	-257	-276

Table 19 China-Hong Kong Rice Utilization and Net Trade, 2013-2023

	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24
	(Thousand Metric Tons)										
Consumption	438	445	447	453	458	463	468	473	477	481	494
Ending Stocks	0	0	0	0	0	0	0	0	0	0	0
Domestic Use	438	445	447	453	458	463	468	473	477	481	494
Net Trade	-438	-445	-447	-453	-458	-463	-468	-473	-477	-481	-494

Table 20 India Rice Supply, Utilization and Net Trade, 2013-2023

	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24
	(Thousand Hectares)										
Area Harvested	43,503	43,480	43,590	43,535	43,451	43,420	43,479	43,527	43,562	43,567	43,564
	(Metric Tons per Hectare)										
Yield	2.37	2.45	2.48	2.51	2.54	2.58	2.6	2.63	2.66	2.67	2.74
	(Thousand Metric Tons)										
Production	103,265	106,474	108,287	109,428	110,182	112,093	113,160	114,553	115,865	116,536	119,152
Beginning Stocks	25,100	23,302	23,562	24,316	24,687	24,404	24,729	24,718	24,715	24,804	24,094
Domestic Supply	128,365	129,776	131,849	133,744	134,868	136,497	137,889	139,271	140,580	141,340	143,246
Consumption	95,034	96,567	98,208	99,908	101,578	103,035	104,607	106,182	107,717	109,158	110,532
Ending Stocks	23,302	23,562	24,316	24,687	24,404	24,729	24,718	24,715	24,804	24,094	24,727
Domestic Use	118,336	120,129	122,524	124,594	125,982	127,764	129,325	130,897	132,521	133,252	135,259
Net Trade	10,029	9,647	9,324	9,149	8,886	8,733	8,564	8,374	8,059	8,088	7,987

Table 21 Indonesia Rice Supply, Utilization and Net Trade, 2013-2023

	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24
	(Thousand Hectares)										
Area Harvested	12,168	12,198	12,272	12,208	12,207	12,220	12,204	12,208	12,200	12,197	12,227
	(Metric Tons per Hectare)										
Yield	3.1	3.14	3.17	3.21	3.26	3.29	3.31	3.34	3.36	3.37	3.39
	(Thousand Metric Tons)										
Production	37,758	38,321	38,905	39,130	39,779	40,251	40,384	40,743	40,946	41,160	41,505
Beginning Stocks	3,085	2,550	2,686	2,872	2,999	3,069	3,103	3,118	3,124	3,126	3,127
Domestic Supply	40,843	40,872	41,592	42,002	42,778	43,320	43,487	43,861	44,070	44,286	44,633
Consumption	40,010	40,302	40,794	41,055	41,423	41,918	42,267	42,611	42,955	43,296	43,590
Ending Stocks	2,550	2,686	2,872	2,999	3,069	3,103	3,118	3,124	3,126	3,127	3,127
Domestic Use	42,560	42,989	43,666	44,054	44,492	45,022	45,385	45,735	46,081	46,424	46,717
Net Trade	-1,717	-2,117	-2,074	-2,052	-1,715	-1,701	-1,897	-1,874	-2,011	-2,137	-2,085

Table 22 Iran Rice Supply, Utilization and Net Trade, 2013-2023

	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24
					(Thousand Hectares)						
Area Harvested	570	581	592	595	598	600	603	604	605	606	608
					(Metric Tons per Hectare)						
Yield	2.81	2.83	2.86	2.88	2.91	2.93	2.96	2.98	3.01	3.03	3.06
					(Thousand Metric Tons)						
Production	1,601	1,645	1,690	1,715	1,738	1,759	1,783	1,802	1,820	1,839	1,858
Beginning Stocks	756	704	618	578	573	576	588	603	615	629	645
Domestic Supply	2,357	2,349	2,308	2,293	2,311	2,335	2,371	2,405	2,435	2,468	2,503
Consumption	3,373	3,441	3,462	3,559	3,597	3,668	3,729	3,753	3,813	3,869	3,892
Ending Stocks	704	618	578	573	576	588	603	615	629	645	656
Domestic Use	4,077	4,059	4,040	4,132	4,172	4,256	4,332	4,368	4,443	4,514	4,549
Net Trade	-1,720	-1,710	-1,731	-1,839	-1,862	-1,921	-1,961	-1,962	-2,008	-2,045	-2,045

Table 23 Iraq Rice Supply, Utilization and Net Trade, 2013-2023

	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24
					(Thousand Hectares)						
Area Harvested	65	67	68	69	70	72	75	76	75	75	75
					(Metric Tons per Hectare)						
Yield	2.17	2.17	2.19	2.2	2.22	2.23	2.24	2.25	2.27	2.28	2.29
					(Thousand Metric Tons)						
Production	142	146	148	152	156	160	168	171	169	171	173
Beginning Stocks	208	285	331	358	379	398	415	431	447	461	475
Domestic Supply	350	431	480	510	535	558	583	602	616	632	648
Consumption	1,511	1,538	1,603	1,665	1,733	1,790	1,848	1,902	1,958	2,013	2,066
Ending Stocks	285	331	358	379	398	415	431	447	461	475	489
Domestic Use	1,796	1,869	1,961	2,044	2,131	2,205	2,279	2,349	2,419	2,488	2,556
Net Trade	-1,446	-1,438	-1,481	-1,534	-1,595	-1,647	-1,696	-1,747	-1,803	-1,856	-1,908

Table 24 Japan Rice Supply, Utilization and Net Trade, 2013-2023

	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24
					(Thousand Hectares)						
Area Harvested	1,603	1,572	1,548	1,526	1,510	1,489	1,483	1,462	1,456	1,449	1,436
					(Metric Tons per Hectare)						
Yield	4.8	4.81	4.81	4.8	4.81	4.8	4.8	4.8	4.8	4.79	4.79
					(Thousand Metric Tons)						
Production	7,697	7,556	7,445	7,332	7,259	7,152	7,121	7,017	6,983	6,941	6,873
Beginning Stocks	2,753	2,768	2,712	2,680	2,639	2,590	2,491	2,436	2,343	2,266	2,198
Domestic Supply	10,450	10,324	10,157	10,012	9,898	9,742	9,612	9,453	9,326	9,207	9,072
Consumption	8,164	8,094	7,959	7,854	7,790	7,733	7,658	7,592	7,543	7,491	7,400
Ending Stocks	2,768	2,712	2,680	2,639	2,590	2,491	2,436	2,343	2,266	2,198	2,153
Domestic Use	10,932	10,806	10,639	10,494	10,380	10,224	10,094	9,935	9,808	9,689	9,554
Net Trade	-482	-482	-482	-482	-482	-482	-482	-482	-482	-482	-482

Table 25 Kenya Rice Supply, Utilization and Net Trade, 2013-2023

	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24
					(Thousand Hectares)						
Area Harvested	33	33	34	34	35	36	36	37	38	39	40
					(Metric Tons per Hectares)						
Yield	1.8	1.82	1.83	1.84	1.84	1.85	1.86	1.86	1.87	1.87	1.87
					(Thousand Metric Tons)						
Production	58	60	61	63	64	66	67	69	71	73	74
Beginning Stocks	77	86	91	107	113	123	138	147	156	166	174
Domestic Supply	135	147	153	169	178	188	206	216	226	238	248
Consumption	498	517	578	605	642	713	769	823	862	895	928
Ending Stocks	86	91	107	113	123	138	147	156	166	174	182
Domestic Use	584	608	685	718	765	851	917	978	1,028	1,068	1,111
Net Trade	-449	-461	-533	-549	-587	-662	-711	-762	-801	-830	-863

Table 26 Lao PDR Rice Supply, Utilization and Net Trade, 2013-2023

	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24
	(Thousand Hectares)										
Area Harvested	872	884	886	891	898	909	920	930	942	953	963
	(Metric Tons per Hectares)										
Yield	1.77	1.8	1.83	1.87	1.93	1.98	2.02	2.07	2.11	2.15	2.17
	(Thousand Metric Tons)										
Production	1,547	1,589	1,621	1,665	1,733	1,800	1,861	1,922	1,985	2,051	2,093
Beginning Stocks	50	79	80	81	83	84	85	86	87	89	90
Domestic Supply	1,597	1,668	1,701	1,746	1,816	1,884	1,946	2,008	2,072	2,139	2,183
Consumption	1,533	1,565	1,595	1,633	1,664	1,698	1,723	1,751	1,788	1,815	1,856
Ending Stocks	79	80	81	83	84	85	86	87	89	90	91
Domestic Use	1,612	1,645	1,676	1,716	1,748	1,783	1,809	1,838	1,877	1,905	1,947
Net Trade	-15	23	25	31	68	101	137	170	196	234	235

Table 27 Liberia Rice Supply, Utilization and Net Trade, 2013-2023

	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24
	(Thousand Hectares)										
Area Harvested	258	262	266	269	273	275	278	280	283	285	286
	(Metric Tons per Hectares)										
Yield	0.78	0.79	0.8	0.8	0.81	0.82	0.83	0.84	0.85	0.85	0.86
	(Thousand Metric Tons)										
Production	201	206	212	217	221	226	230	235	239	243	247
Beginning Stocks	0	16	17	18	19	20	21	22	23	24	24
Domestic Supply	201	223	229	235	241	246	252	257	262	267	271
Consumption	424	451	468	501	523	552	569	591	613	625	652
Ending Stocks	16	17	18	19	20	21	22	23	24	24	25
Domestic Use	441	468	486	520	544	573	591	614	637	649	678
Net Trade	-240	-246	-257	-286	-303	-327	-339	-357	-375	-382	-406

Table 28 Malaysia Rice Supply, Utilization and Net Trade, 2013-2023

	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24
					(Thousand Hectares)						
Area Harvested	680	692	701	707	711	713	714	715	715	715	714
					(Metric Tons per Hectare)						
Yield	2.58	2.58	2.59	2.62	2.64	2.66	2.69	2.73	2.75	2.79	2.82
					(Thousand Metric Tons)						
Production	1,751	1,784	1,816	1,852	1,876	1,896	1,924	1,950	1,970	1,994	2,015
Beginning Stocks	594	676	681	687	692	702	709	716	724	732	740
Domestic Supply	2,345	2,460	2,496	2,539	2,568	2,598	2,633	2,667	2,694	2,726	2,755
Consumption	2,801	2,844	2,875	2,938	2,984	3,030	3,083	3,133	3,184	3,226	3,270
Ending Stocks	676	681	687	692	702	709	716	724	732	740	746
Domestic Use	3,477	3,524	3,563	3,630	3,686	3,739	3,799	3,857	3,916	3,966	4,017
Net Trade	-1,131	-1,065	-1,066	-1,091	-1,118	-1,141	-1,166	-1,191	-1,222	-1,240	-1,262

Table 29 Mali Rice Supply, Utilization and Net Trade, 2013-2023

	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24
					(Thousand Hectares)						
Area Harvested	626	652	695	722	757	776	796	808	817	840	848
					(Metric Tons per Hectares)						
Yield	2.19	2.23	2.28	2.35	2.41	2.47	2.54	2.59	2.65	2.71	2.77
					(Thousand Metric Tons)						
Production	1,370	1,455	1,588	1,693	1,824	1,921	2,018	2,090	2,164	2,274	2,346
Beginning Stocks	127	129	131	133	136	138	141	144	147	149	152
Domestic Supply	1,497	1,584	1,720	1,826	1,960	2,059	2,159	2,234	2,310	2,423	2,497
Consumption	1,526	1,591	1,632	1,706	1,770	1,854	1,925	1,992	2,053	2,128	2,199
Ending Stocks	129	131	133	136	138	141	144	147	149	152	155
Domestic Use	1,655	1,723	1,765	1,841	1,908	1,995	2,069	2,138	2,202	2,280	2,354
Net Trade	-158	-138	-45	-15	52	64	90	96	108	144	143

Table 30 Mexico Rice Supply, Utilization and Net Trade, 2013-2023

	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24
					(Thousand Hectares)						
Area Harvested	36	37	39	40	41	40	40	40	40	40	40
					(Metric Tons per Hectare)						
Yield	3.74	3.71	3.77	3.81	3.78	3.73	3.75	3.73	3.73	3.77	3.79
					(Thousand Metric Tons)						
Production	134	137	148	153	153	151	151	150	149	150	151
Beginning Stocks	168	186	186	188	188	188	190	189	190	191	192
Domestic Supply	302	323	334	341	341	339	340	339	340	342	343
Consumption	863	887	908	930	950	968	990	1,009	1,027	1,038	1,048
Ending Stocks	186	186	188	188	188	190	189	190	191	192	185
Domestic Use	1,049	1,074	1,096	1,118	1,138	1,158	1,179	1,199	1,218	1,230	1,233
Net Trade	-747	-750	-762	-777	-797	-819	-839	-860	-878	-888	-890

Table 31 Mozambique Rice Supply, Utilization and Net Trade, 2013-2023

	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24
					(Thousand Hectares)						
Area Harvested	242	246	251	255	260	265	270	275	281	287	293
					(Metric Tons per Hectares)						
Yield	0.94	0.95	0.97	0.99	1.01	1.03	1.04	1.05	1.07	1.09	1.11
					(Thousand Metric Tons)						
Production	226	233	244	254	263	274	281	289	301	312	325
Beginning Stocks	0	14	12	14	14	15	17	18	20	22	24
Domestic Supply	226	246	256	267	278	289	298	307	321	334	349
Consumption	746	707	750	762	783	830	854	908	953	1,015	1,052
Ending Stocks	14	12	14	14	15	17	18	20	22	24	25
Domestic Use	760	719	763	777	798	847	872	928	975	1,039	1,077
Net Trade	-533	-472	-507	-509	-520	-558	-574	-621	-654	-705	-729

Table 32 Myanmar Rice Supply, Utilization and Net Trade, 2013-2023

	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24
					(Thousand Hectares)						
Area Harvested	6,507	6,611	6,744	6,809	6,885	6,900	6,899	6,901	6,899	6,893	6,889
					(Metric Tons per Hectare)						
Yield	1.69	1.71	1.73	1.74	1.76	1.78	1.8	1.81	1.83	1.85	1.87
					(Thousand Metric Tons)						
Production	11,014	11,304	11,649	11,878	12,131	12,277	12,393	12,516	12,631	12,740	12,852
Beginning Stocks	147	94	177	395	489	485	404	374	355	358	422
Domestic Supply	11,161	11,398	11,825	12,273	12,620	12,762	12,797	12,890	12,986	13,098	13,274
Consumption	10,391	10,521	10,657	10,788	10,981	11,139	11,254	11,372	11,421	11,427	11,555
Ending Stocks	94	177	395	489	485	404	374	355	358	422	459
Domestic Use	10,485	10,697	11,052	11,277	11,467	11,543	11,628	11,727	11,779	11,849	12,015
Net Trade	677	701	774	996	1,153	1,218	1,169	1,163	1,207	1,250	1,259

Table 33 Nigeria Rice Supply, Utilization and Net Trade, 2013-2023

	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24
					(Thousand Hectares)						
Area Harvested	2,479	2,547	2,670	2,734	2,801	2,873	2,947	3,016	3,090	3,162	3,213
					(Metric Tons per Hectare)						
Yield	1.16	1.22	1.24	1.27	1.31	1.34	1.37	1.41	1.44	1.48	1.51
					(Thousand Metric Tons)						
Production	2,884	3,101	3,315	3,475	3,655	3,847	4,048	4,245	4,455	4,667	4,853
Beginning Stocks	885	659	652	669	685	696	705	711	715	718	721
Domestic Supply	3,769	3,761	3,968	4,144	4,340	4,544	4,753	4,956	5,170	5,385	5,573
Consumption	6,054	6,093	6,286	6,405	6,567	6,854	7,054	7,324	7,561	7,785	7,995
Ending Stocks	659	652	669	685	696	705	711	715	718	721	722
Domestic Use	6,713	6,745	6,955	7,090	7,263	7,559	7,765	8,039	8,279	8,506	8,717
Net Trade	-2,944	-2,984	-2,987	-2,945	-2,924	-3,015	-3,012	-3,083	-3,109	-3,121	-3,144

Table 34 Pakistan Rice Supply, Utilization and Net Trade, 2013-2023

	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24
					(Thousand Hectares)						
Area Harvested	2,704	2,726	2,724	2,756	2,768	2,792	2,795	2,837	2,913	2,946	2,990
					(Metric Tons per Hectare)						
Yield	2.34	2.36	2.36	2.36	2.36	2.37	2.37	2.37	2.37	2.38	2.39
					(Thousand Metric Tons)						
Production	6,323	6,426	6,420	6,517	6,536	6,607	6,619	6,731	6,915	7,024	7,134
Beginning Stocks	600	956	1,114	964	744	749	772	750	719	753	781
Domestic Supply	6,923	7,382	7,534	7,481	7,280	7,355	7,391	7,482	7,634	7,777	7,915
Consumption	2,618	2,743	2,821	2,904	2,961	3,026	3,077	3,113	3,169	3,227	3,270
Ending Stocks	956	1,114	964	744	749	772	750	719	753	781	811
Domestic Use	3,574	3,857	3,786	3,648	3,710	3,797	3,827	3,832	3,922	4,008	4,081
Net Trade	3,349	3,525	3,748	3,833	3,571	3,558	3,563	3,649	3,712	3,769	3,834

Table 35 Philippines Rice Supply, Utilization and Net Trade, 2013-2023

	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24
					(Thousand Hectares)						
Area Harvested	4,692	4,693	4,698	4,682	4,679	4,683	4,700	4,698	4,708	4,712	4,718
					(Metric Tons per Hectare)						
Yield	2.47	2.48	2.51	2.56	2.62	2.67	2.71	2.77	2.83	2.88	2.93
					(Thousand Metric Tons)						
Production	11,606	11,656	11,795	11,997	12,265	12,513	12,756	13,035	13,301	13,551	13,823
Beginning Stocks	1,487	1,684	1,672	1,689	1,683	1,698	1,714	1,734	1,754	1,776	1,795
Domestic Supply	13,093	13,341	13,467	13,686	13,948	14,211	14,469	14,769	15,055	15,327	15,618
Consumption	12,883	13,080	13,184	13,348	13,469	13,643	13,799	13,984	14,127	14,294	14,451
Ending Stocks	1,684	1,672	1,689	1,683	1,698	1,714	1,734	1,754	1,776	1,795	1,815
Domestic Use	14,567	14,752	14,873	15,032	15,168	15,357	15,533	15,738	15,903	16,089	16,267
Net Trade	-1,474	-1,412	-1,406	-1,345	-1,220	-1,146	-1,064	-969	-848	-762	-649

Table 36 Saudi Arabia Rice Supply, Utilization and Net Trade, 2013-2023

	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24
	(Thousand Metric Tons)										
Beginning Stocks	214	221	225	229	233	238	241	244	247	250	253
Domestic Supply	214	221	225	229	233	238	241	244	247	250	253
Consumption	1,265	1,307	1,351	1,396	1,432	1,464	1,498	1,528	1,557	1,581	1,609
Ending Stocks	221	225	229	233	238	241	244	247	250	253	255
Domestic Use	1,486	1,532	1,580	1,630	1,670	1,705	1,742	1,775	1,807	1,834	1,864
Net Trade	-1,272	-1,311	-1,355	-1,401	-1,437	-1,467	-1,501	-1,531	-1,560	-1,584	-1,611

Table 37 Senegal Rice Supply, Utilization and Net Trade, 2013-2023

	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24
	(Thousand Hectares)										
Area Harvested	148	150	155	158	160	162	165	167	169	171	173
	(Metric Tons per Hectares)										
Yield	3.38	3.57	3.76	3.97	4.19	4.42	4.62	4.82	5.03	5.25	5.43
	(Thousand Metric Tons)										
Production	500	537	583	625	671	719	762	804	850	899	941
Beginning Stocks	247	265	246	251	251	252	262	271	281	291	301
Domestic Supply	747	802	828	876	923	971	1,023	1,075	1,131	1,190	1,242
Consumption	1,574	1,604	1,653	1,707	1,758	1,808	1,857	1,906	1,954	2,003	2,051
Ending Stocks	265	246	251	251	252	262	271	281	291	301	305
Domestic Use	1,839	1,850	1,904	1,958	2,010	2,070	2,128	2,187	2,245	2,304	2,356
Net Trade	-1,092	-1,048	-1,075	-1,082	-1,087	-1,100	-1,105	-1,112	-1,114	-1,114	-1,115

Table 38 Sierra Leone Rice Supply, Utilization and Net Trade, 2013-2023

	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24
	(Thousand Hectares)										
Area Harvested	617	624	632	641	651	661	672	683	694	705	716
	(Metric Tons per Hectares)										
Yield	1.25	1.28	1.32	1.37	1.41	1.45	1.5	1.54	1.59	1.64	1.69
	(Thousand Metric Tons)										
Production	768	802	837	875	916	959	1,005	1,054	1,104	1,156	1,210
Beginning Stocks	0	1	2	3	5	6	8	9	11	12	14
Domestic Supply	768	803	840	879	921	965	1,012	1,063	1,115	1,169	1,224
Consumption	1,121	1,153	1,185	1,225	1,255	1,294	1,334	1,374	1,418	1,453	1,494
Ending Stocks	1	2	3	5	6	8	9	11	12	14	15
Domestic Use	1,122	1,155	1,188	1,231	1,262	1,302	1,343	1,385	1,430	1,467	1,510
Net Trade	-353	-353	-349	-352	-341	-337	-331	-322	-315	-298	-286

Table 39 Singapore Rice Utilization and Net Trade, 2013-2023

	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24
	(Thousand Metric Tons)										
Consumption	361	364	372	375	376	377	378	378	377	375	386
Ending Stocks	0	0	0	0	0	0	0	0	0	0	0
Domestic Use	361	364	372	375	376	377	378	378	377	375	386
Net Trade	-361	-364	-372	-375	-376	-377	-378	-378	-377	-375	-386

Table 40 South Africa Rice Supply, Utilization and Net Trade, 2013-2023

	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24
	(Thousand Metric Tons)										
Beginning Stocks	22	41	54	56	66	78	91	92	95	100	99
Domestic Supply	22	41	54	56	66	78	91	92	95	100	99
Consumption	930	919	928	932	940	955	961	973	999	995	1,028
Ending Stocks	41	54	56	66	78	91	92	95	100	99	106
Domestic Use	971	972	984	998	1,018	1,046	1,053	1,068	1,098	1,093	1,134
Net Trade	-949	-931	-930	-943	-952	-968	-962	-976	-1,004	-994	-1,035

Table 41 South Korea Rice Supply, Utilization and Net Trade, 2013-2023

	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24
	(Thousand Hectares)										
Area Harvested	843	835	834	829	828	826	827	824	825	822	818
	(Metric Tons per Hectare)										
Yield	5.02	5.02	5.03	5.04	5.05	5.05	5.05	5.05	5.05	5.05	5.05
	(Thousand Metric Tons)										
Production	4,232	4,188	4,191	4,176	4,182	4,175	4,180	4,158	4,167	4,149	4,132
Beginning Stocks	722	826	924	986	1,050	1,117	1,195	1,297	1,398	1,507	1,593
Domestic Supply	4,954	5,014	5,115	5,162	5,232	5,292	5,375	5,454	5,565	5,655	5,725
Consumption	4,539	4,499	4,538	4,520	4,524	4,505	4,487	4,465	4,467	4,471	4,446
Ending Stocks	826	924	986	1,050	1,117	1,195	1,297	1,398	1,507	1,593	1,688
Domestic Use	5,365	5,423	5,523	5,570	5,641	5,701	5,784	5,863	5,973	6,064	6,134
Net Trade	-410	-409	-409	-409	-409	-409	-409	-409	-409	-409	-409

Table 42 Taiwan Rice Supply, Utilization and Net Trade, 2013-2023

	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24
					(Thousand Hectares)						
Area Harvested	279	276	272	268	267	266	263	260	256	253	252
					(Metric Tons per Hectare)						
Yield	4.14	4.14	4.14	4.14	4.14	4.15	4.15	4.16	4.18	4.21	4.24
					(Thousand Metric Tons)						
Production	1,153	1,142	1,127	1,111	1,106	1,103	1,093	1,082	1,072	1,065	1,070
Beginning Stocks	377	367	352	332	304	288	282	272	256	236	213
Domestic Supply	1,530	1,509	1,480	1,443	1,410	1,391	1,375	1,354	1,328	1,301	1,283
Consumption	1,286	1,279	1,271	1,262	1,245	1,232	1,226	1,221	1,216	1,211	1,206
Ending Stocks	367	352	332	304	288	282	272	256	236	213	200
Domestic Use	1,653	1,632	1,603	1,566	1,533	1,514	1,498	1,477	1,451	1,424	1,406
Net Trade	-123	-123	-123	-123	-123	-123	-123	-123	-123	-123	-123

Table 43 Tanzania Rice Supply, Utilization and Net Trade, 2013-2023

	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24
					(Thousand Hectares)						
Area Harvested	954	966	978	990	1,001	1,011	1,022	1,031	1,041	1,051	1,060
					(Metric Tons per Hectares)						
Yield	1.04	1.05	1.07	1.09	1.11	1.13	1.15	1.17	1.19	1.21	1.23
					(Thousand Metric Tons)						
Production	995	1,017	1,049	1,081	1,113	1,145	1,177	1,208	1,240	1,272	1,305
Beginning Stocks	0	26	39	52	53	55	57	59	62	65	67
Domestic Supply	995	1,044	1,089	1,133	1,166	1,200	1,234	1,268	1,302	1,337	1,371
Consumption	1,205	1,281	1,340	1,378	1,426	1,495	1,543	1,606	1,681	1,739	1,796
Ending Stocks	26	39	52	53	55	57	59	62	65	67	69
Domestic Use	1,232	1,320	1,391	1,431	1,481	1,552	1,603	1,668	1,746	1,805	1,865
Net Trade	-236	-277	-302	-298	-315	-352	-369	-400	-444	-469	-494

Table 44 Thailand Rice Supply, Utilization and Net Trade, 2013-2023

	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24
	(Thousand Hectares)										
Area Harvested	10,867	10,789	10,785	10,788	10,811	10,817	10,813	10,807	10,806	10,791	10,777
	(Metric Tons per Hectare)										
Yield	1.88	1.88	1.9	1.92	1.92	1.94	1.96	1.97	1.97	1.97	1.98
	(Thousand Metric Tons)										
Production	20,456	20,327	20,490	20,671	20,801	20,955	21,145	21,254	21,280	21,307	21,362
Beginning Stocks	12,830	14,821	16,849	18,915	20,969	22,953	24,551	25,776	26,581	26,867	26,810
Domestic Supply	33,286	35,147	37,339	39,586	41,770	43,908	45,695	47,030	47,861	48,174	48,172
Consumption	10,704	10,651	10,647	10,627	10,626	10,646	10,655	10,673	10,700	10,704	10,722
Ending Stocks	14,821	16,849	18,915	20,969	22,953	24,551	25,776	26,581	26,867	26,810	26,478
Domestic Use	25,525	27,500	29,562	31,596	33,578	35,197	36,431	37,254	37,567	37,514	37,199
Net Trade	7,761	7,648	7,777	7,989	8,192	8,711	9,264	9,776	10,294	10,660	10,973

Table 45 Turkey Rice Supply, Utilization and Net Trade, 2013-2023

	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24
	(Thousand Hectares)										
Area Harvested	102	101	102	101	101	101	101	101	100	100	100
	(Metric Tons per Hectare)										
Yield	4.89	4.93	4.99	5.05	5.11	5.17	5.23	5.29	5.34	5.4	5.46
	(Thousand Metric Tons)										
Production	500	501	507	513	518	522	527	532	537	542	547
Beginning Stocks	204	207	204	202	196	196	193	176	168	166	161
Domestic Supply	704	708	711	715	713	718	720	708	705	708	708
Consumption	777	786	796	801	815	826	813	815	825	830	833
Ending Stocks	207	204	202	196	196	193	176	168	166	161	155
Domestic Use	985	990	998	997	1,011	1,019	989	983	991	990	988
Net Trade	-280	-281	-287	-282	-298	-301	-269	-275	-286	-282	-280

Table 46 Uruguay Rice Supply, Utilization and Net Trade, 2013-2023

	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24
	(Thousand Hectares)										
Area Harvested	181	176	178	180	181	181	180	179	178	177	179
	(Metric Tons per Hectare)										
Yield	5.63	5.74	5.79	5.87	5.91	5.96	6	6.05	6.09	6.17	6.25
	(Thousand Metric Tons)										
Production	1,018	1,011	1,031	1,053	1,068	1,077	1,080	1,082	1,084	1,095	1,116
Beginning Stocks	93	111	108	108	108	108	108	107	107	107	107
Domestic Supply	1,111	1,122	1,139	1,161	1,176	1,185	1,188	1,189	1,192	1,202	1,223
Consumption	91	87	87	85	84	84	83	83	82	80	78
Ending Stocks	111	108	108	108	108	108	107	107	107	107	107
Domestic Use	202	194	195	193	192	192	191	190	189	187	185
Net Trade	910	928	944	969	984	993	997	999	1,003	1,015	1,038

Table 47 Vietnam Rice Supply, Utilization and Net Trade, 2013-2023

	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24
	(Thousand Hectares)										
Area Harvested	7,867	7,897	7,914	7,926	7,930	7,927	7,925	7,920	7,916	7,908	7,905
	(Metric Tons per Hectare)										
Yield	3.54	3.55	3.58	3.6	3.63	3.66	3.69	3.72	3.75	3.78	3.81
	(Thousand Metric Tons)										
Production	27,881	27,994	28,326	28,503	28,762	29,018	29,267	29,461	29,663	29,863	30,099
Beginning Stocks	2,326	2,430	2,419	2,506	2,550	2,640	2,680	2,624	2,663	2,652	2,588
Domestic Supply	30,207	30,423	30,745	31,009	31,311	31,658	31,947	32,085	32,326	32,515	32,687
Consumption	20,661	20,745	20,730	20,951	21,034	21,240	21,413	21,461	21,584	21,750	21,883
Ending Stocks	2,430	2,419	2,506	2,550	2,640	2,680	2,624	2,663	2,652	2,588	2,578
Domestic Use	23,091	23,164	23,236	23,500	23,674	23,920	24,037	24,123	24,236	24,338	24,461
Net Trade	7,116	7,259	7,509	7,509	7,637	7,738	7,911	7,962	8,090	8,176	8,225

Table 48 Africa Total Rice Supply, Utilization and Net Trade, 2013-2023

	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24
	(Thousand Hectares)										
Area Harvested	10,754	10,875	11,137	11,331	11,534	11,723	11,917	12,087	12,265	12,453	12,604
	(Metric Tons per Hectare)										
Yield	1.76	1.79	1.82	1.84	1.87	1.9	1.93	1.96	1.99	2.02	2.06
	(Thousand Metric Tons)										
Production	18,908	19,424	20,217	20,845	21,524	22,236	22,953	23,709	24,400	25,194	25,939
Beginning Stocks	2,489	2,672	2,885	3,110	3,238	3,269	3,286	3,263	3,256	3,287	3,313
Domestic Supply	21,397	22,096	23,102	23,954	24,762	25,504	26,240	26,973	27,656	28,481	29,252
Consumption	31,402	31,869	32,747	33,675	34,689	36,013	37,046	38,267	39,418	40,432	41,589
Ending Stocks	2,672	2,885	3,110	3,238	3,269	3,286	3,263	3,256	3,287	3,313	3,307
Domestic Use	34,073	34,754	35,856	36,912	37,958	39,300	40,310	41,523	42,705	43,745	44,896
Net Trade	-12,677	-12,658	-12,754	-12,958	-13,196	-13,795	-14,070	-14,550	-15,049	-15,264	-15,644

Table 49 African Aggregate of Countries with Individual AGRM Models – Rice Supply, Utilization, and Net Trade, 2013-2023

	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24
	(Thousand Hectares)										
Area Harvested	8,505	8,634	8,885	9,068	9,254	9,426	9,603	9,756	9,916	10,085	10,217
	(Metric Tons per Hectare)										
Yield	1.79	1.82	1.85	1.88	1.91	1.94	1.96	1.99	2.02	2.06	2.09
	(Thousand Metric Tons)										
Production	15,202	15,716	16,456	17,048	17,651	18,255	18,862	19,462	20,076	20,748	21,366
Beginning Stocks	2,437	2,598	2,801	3,012	3,137	3,163	3,176	3,149	3,138	3,164	3,187
Domestic Supply	17,639	18,314	19,257	20,060	20,787	21,418	22,038	22,611	23,214	23,912	24,553
Consumption	24,985	25,396	26,134	26,856	27,637	28,730	29,544	30,549	31,490	32,306	33,270
Ending Stocks	2,598	2,801	3,012	3,137	3,163	3,176	3,149	3,138	3,164	3,187	3,177
Domestic Use	27,583	28,197	29,147	29,993	30,800	31,907	32,693	33,686	34,654	35,493	36,447
Net Trade	-9,944	-9,883	-9,890	-9,933	-10,013	-10,489	-10,655	-11,076	-11,440	-11,581	-11,894

Table 50 African Aggregate of Other Countries Modeled as a Group in AGRM – Rice Supply, Utilization and Net Trade, 2013-2023

	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24
					(Thousand Hectares)						
Area Harvested	2,248	2,240	2,251	2,264	2,280	2,297	2,314	2,331	2,349	2,368	2,387
					(Metric Tons per Hectare)						
Yield	1.65	1.66	1.67	1.68	1.7	1.73	1.77	1.82	1.84	1.88	1.92
					(Thousand Metric Tons)						
Production	3,706	3,709	3,761	3,797	3,874	3,981	4,091	4,248	4,324	4,446	4,573
Beginning Stocks	52	73	84	97	101	106	110	114	118	122	126
Domestic Supply	3,758	3,782	3,845	3,894	3,975	4,086	4,202	4,362	4,442	4,568	4,699
Consumption	6,417	6,473	6,612	6,819	7,052	7,283	7,502	7,718	7,928	8,125	8,319
Ending Stocks	73	84	97	101	106	110	114	118	122	126	130
Domestic Use	6,490	6,558	6,710	6,920	7,158	7,393	7,616	7,837	8,050	8,251	8,449
Net Trade	-2,732	-2,775	-2,864	-3,025	-3,183	-3,306	-3,415	-3,475	-3,608	-3,683	-3,750

Table 51 Western Hemisphere Rice Supply, Utilization and Net Trade, 2013-2023

	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24
					(Thousand Hectares)						
Area Harvested	6,415	6,488	6,517	6,535	6,557	6,581	6,611	6,630	6,637	6,647	6,659
					(Metric Tons per Hectare)						
Yield	3.7	3.77	3.8	3.84	3.87	3.9	3.92	3.95	3.98	4.01	4.04
					(Thousand Metric Tons)						
Production	23,717	24,427	24,766	25,072	25,404	25,661	25,944	26,210	26,403	26,651	26,873
Beginning Stocks	3,462	3,546	3,737	3,983	4,163	4,204	4,249	4,309	4,371	4,381	4,323
Domestic Supply	27,179	27,973	28,503	29,055	29,567	29,865	30,193	30,519	30,773	31,031	31,196
Consumption	22,891	23,067	23,557	24,045	24,474	24,862	25,256	25,516	25,736	26,022	26,133
Ending Stocks	3,546	3,737	3,983	4,163	4,204	4,249	4,309	4,371	4,381	4,323	4,315
Domestic Use	26,436	26,804	27,540	28,208	28,678	29,111	29,564	29,887	30,116	30,345	30,448
Net Trade	742	1,169	964	847	889	755	629	632	657	686	748

Table 52 Western Hemisphere Aggregate of Countries with Individual AGRM Models – Rice Supply, Utilization and Net Trade, 2013-2023

	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24
	(Thousand Hectares)										
Area Harvested	4,310	4,380	4,406	4,432	4,455	4,474	4,496	4,509	4,509	4,510	4,515
	(Metric Tons per Hectare)										
Yield	4.1	4.15	4.18	4.21	4.24	4.26	4.29	4.31	4.32	4.34	4.36
	(Thousand Metric Tons)										
Production	17,675	18,176	18,437	18,653	18,880	19,075	19,279	19,425	19,495	19,569	19,666
Beginning Stocks	2,369	2,341	2,527	2,725	2,870	2,876	2,896	2,921	2,955	2,943	2,862
Domestic Supply	20,044	20,517	20,964	21,379	21,750	21,951	22,175	22,345	22,450	22,512	22,528
Consumption	15,115	15,265	15,519	15,831	16,085	16,349	16,566	16,690	16,798	16,969	16,991
Ending Stocks	2,341	2,527	2,725	2,870	2,876	2,896	2,921	2,955	2,943	2,862	2,837
Domestic Use	17,455	17,792	18,245	18,701	18,962	19,245	19,486	19,646	19,741	19,832	19,828
Net Trade	2,589	2,724	2,719	2,678	2,789	2,706	2,689	2,700	2,710	2,680	2,701

Table 53 Western Hemisphere Aggregate of Other Countries Modeled as a Group in AGRM – Rice Supply, Utilization and Net Trade, 2013-2023

	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24
	(Thousand Hectares)										
Area Harvested	2,105	2,108	2,111	2,104	2,103	2,107	2,115	2,121	2,128	2,136	2,144
	(Metric Tons per Hectare)										
Yield	2.87	2.97	3	3.05	3.1	3.13	3.15	3.2	3.25	3.32	3.36
	(Thousand Metric Tons)										
Production	6,041	6,251	6,329	6,419	6,524	6,587	6,665	6,786	6,908	7,082	7,208
Beginning Stocks	1,093	1,205	1,210	1,257	1,293	1,328	1,353	1,388	1,415	1,438	1,461
Domestic Supply	7,134	7,457	7,539	7,677	7,817	7,914	8,018	8,174	8,323	8,519	8,668
Consumption	7,776	7,802	8,037	8,214	8,388	8,513	8,690	8,826	8,938	9,053	9,142
Ending Stocks	1,205	1,210	1,257	1,293	1,328	1,353	1,388	1,415	1,438	1,461	1,478
Domestic Use	8,981	9,012	9,295	9,507	9,716	9,865	10,078	10,241	10,375	10,513	10,621
Net Trade	-1,847	-1,556	-1,755	-1,830	-1,899	-1,951	-2,060	-2,068	-2,052	-1,994	-1,953

Table 54 Asian Rice Supply, Utilization and Net Trade, 2013-2023

	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24
	(Thousand Hectares)										
Area Harvested	142,469	142,306	142,701	142,768	142,803	142,837	142,738	142,722	142,756	142,596	142,565
	(Metric Tons per Hectare)										
Yield	3	3.06	3.08	3.11	3.13	3.17	3.19	3.21	3.23	3.25	3.29
	(Thousand Metric Tons)										
Production	427,525	434,814	439,863	443,967	447,665	452,421	455,095	458,492	461,776	463,836	468,409
Beginning Stocks	99,955	99,141	102,688	107,293	111,959	116,589	121,483	125,261	129,066	132,331	134,385
Domestic Supply	527,480	533,955	542,551	551,260	559,624	569,010	576,578	583,754	590,842	596,167	602,794
Consumption	415,314	418,741	422,438	426,188	429,734	433,477	436,873	439,741	443,103	446,160	448,984
Ending Stocks	99,141	102,688	107,293	111,959	116,589	121,483	125,261	129,066	132,331	134,385	137,785
Domestic Use	514,454	521,429	529,731	538,147	546,323	554,960	562,135	568,806	575,434	580,545	586,769
Net Trade	13,026	12,526	12,820	13,113	13,301	14,050	14,444	14,947	15,408	15,622	16,024

Table 55 Asian Aggregate of Countries with Individual Models in AGRM – Rice Supply, Utilization and Net Trade, 2013-2023

	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24
	(Thousand Hectares)										
Area Harvested	138,458	138,268	138,647	138,703	138,730	138,757	138,651	138,628	138,655	138,488	138,450
	(Metric Tons per Hectare)										
Yield	3.02	3.08	3.1	3.13	3.16	3.19	3.21	3.24	3.26	3.28	3.31
	(Thousand Metric Tons)										
Production	418,070	425,256	430,231	434,274	437,917	442,620	445,243	448,590	451,824	453,835	458,360
Beginning Stocks	99,153	98,407	101,951	106,556	111,218	115,845	120,736	124,511	128,313	131,576	133,626
Domestic Supply	517,223	523,663	532,183	540,830	549,135	558,465	565,979	573,101	580,137	585,411	591,985
Consumption	403,158	406,432	410,109	413,645	417,059	420,635	423,877	426,621	429,818	432,701	435,398
Ending Stocks	98,407	101,951	106,556	111,218	115,845	120,736	124,511	128,313	131,576	133,626	137,024
Domestic Use	501,565	508,383	516,665	524,863	532,904	541,371	548,388	554,934	561,394	566,326	572,423
Net Trade	15,658	15,280	15,518	15,967	16,231	17,094	17,591	18,167	18,744	19,085	19,563

Table 56 Asian Aggregate of Other Countries Modeled as a Group in AGRM – Rice Supply, Utilization and Net Trade, 2013-2023

	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24
	(Thousand Hectares)										
Area Harvested	4,011	4,039	4,054	4,064	4,072	4,080	4,087	4,094	4,101	4,107	4,114
	(Metric Tons per Hectare)										
Yield	2.36	2.37	2.38	2.39	2.39	2.4	2.41	2.42	2.43	2.43	2.44
	(Thousand Metric Tons)										
Production	9,455	9,558	9,632	9,693	9,748	9,801	9,852	9,903	9,952	10,001	10,049
Beginning Stocks	802	734	737	737	741	744	747	750	752	755	759
Domestic Supply	10,257	10,292	10,369	10,430	10,490	10,545	10,599	10,652	10,704	10,756	10,808
Consumption	12,155	12,309	12,329	12,542	12,675	12,842	12,997	13,120	13,285	13,460	13,585
Ending Stocks	734	737	737	741	744	747	750	752	755	759	761
Domestic Use	12,889	13,046	13,066	13,284	13,419	13,589	13,747	13,872	14,041	14,219	14,347
Net Trade	-2,632	-2,754	-2,697	-2,854	-2,930	-3,044	-3,148	-3,220	-3,336	-3,462	-3,539

Table 57 European Total Rice Supply, Utilization and Net Trade, 2013-2023

	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24
	(Thousand Hectares)										
Area Harvested	677	679	683	686	688	691	693	695	697	699	699
	(Metric Tons per Hectare)										
Yield	3.84	3.88	3.93	3.99	4.05	4.1	4.15	4.2	4.25	4.31	4.33
	(Thousand Metric Tons)										
Production	2,601	2,637	2,686	2,736	2,786	2,830	2,874	2,920	2,965	3,011	3,028
Beginning Stocks	1,169	1,075	959	862	795	757	746	755	771	811	872
Domestic Supply	3,769	3,712	3,645	3,598	3,582	3,586	3,620	3,674	3,737	3,822	3,900
Consumption	4,125	4,148	4,170	4,208	4,220	4,239	4,263	4,284	4,320	4,358	4,394
Ending Stocks	1,075	959	862	795	757	746	755	771	811	872	912
Domestic Use	5,201	5,107	5,032	5,003	4,976	4,985	5,017	5,055	5,131	5,230	5,306
Net Trade	-1,431	-1,395	-1,386	-1,405	-1,395	-1,399	-1,397	-1,381	-1,395	-1,409	-1,406

Table 58 European Aggregate of Countries Modeled Individually in AGRM – Rice Supply, Utilization and Net Trade, 2013-2023

	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24
	(Thousand Hectares)										
Area Harvested	456	458	461	464	468	471	473	476	478	481	481
	(Metric Tons per Hectare)										
Yield	4.62	4.67	4.74	4.81	4.88	4.94	5.01	5.08	5.14	5.21	5.25
	(Thousand Metric Tons)										
Production	2,104	2,138	2,185	2,234	2,283	2,326	2,370	2,416	2,461	2,506	2,523
Beginning Stocks	1,055	903	786	689	619	581	568	576	591	627	684
Domestic Supply	3,159	3,041	2,971	2,923	2,902	2,907	2,938	2,991	3,052	3,133	3,208
Consumption	3,389	3,410	3,429	3,451	3,463	3,472	3,490	3,504	3,517	3,534	3,546
Ending Stocks	903	786	689	619	581	568	576	591	627	684	721
Domestic Use	4,291	4,196	4,118	4,071	4,044	4,041	4,066	4,095	4,145	4,218	4,267
Net Trade	-1,132	-1,155	-1,147	-1,148	-1,142	-1,134	-1,128	-1,104	-1,092	-1,085	-1,059

Table 59 European Aggregate of Other Countries Modeled as a Group in AGRM - Rice Supply, Utilization and Net Trade, 2013-2023

	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24
	(Thousand Hectares)										
Area Harvested	222	221	222	221	221	220	220	219	219	218	218
	(Metric Tons per Hectare)										
Yield	2.24	2.25	2.26	2.27	2.28	2.29	2.29	2.3	2.31	2.31	2.32
	(Thousand Metric Tons)										
Production	497	498	501	502	503	504	504	504	504	505	505
Beginning Stocks	114	173	173	173	176	176	178	179	180	184	187
Domestic Supply	611	671	674	676	679	680	682	683	684	688	692
Consumption	737	738	740	756	756	767	772	780	803	825	848
Ending Stocks	173	173	173	176	176	178	179	180	184	187	191
Domestic Use	909	911	914	932	933	945	951	960	986	1,012	1,039
Net Trade	-299	-241	-239	-257	-253	-265	-269	-277	-302	-324	-347

Table 60 Oceania Total Rice Supply, Utilization and Net Trade, 2013-2023

	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24
	(Thousand Hectares)										
Area Harvested	102	109	115	116	117	117	117	117	117	117	117
	(Metric Tons per Hectare)										
Yield	7.02	7.01	7	7	7.01	7.02	7.02	7.04	7.06	7.08	7.08
	(Thousand Metric Tons)										
Production	720	765	803	813	821	823	823	822	829	831	831
Beginning Stocks	125	93	93	121	130	137	140	133	138	131	122
Domestic Supply	845	858	897	934	950	960	963	955	967	963	954
Consumption	639	640	656	666	682	699	713	727	741	758	777
Ending Stocks	93	93	121	130	137	140	133	138	131	122	144
Domestic Use	731	734	777	796	819	839	846	865	872	881	921
Net Trade	114	124	120	138	131	121	117	90	95	82	33

Table 61 Oceania Aggregate of Countries Modeled individually in AGRM – Rice Supply, Utilization and Net Trade, 2013-2023

	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24
	(Thousand Hectares)										
Area Harvested	99	106	112	114	115	115	115	114	115	115	115
	(Metric Tons per Hectare)										
Yield	7.07	7.05	7.04	7.03	7.04	7.05	7.05	7.07	7.1	7.11	7.11
	(Thousand Metric Tons)										
Production	702	750	789	800	807	810	809	808	816	817	817
Beginning Stocks	120	87	88	115	124	131	134	126	131	124	115
Domestic Supply	822	838	877	915	931	940	943	934	947	942	932
Consumption	362	352	355	353	355	359	360	362	363	368	375
Ending Stocks	87	88	115	124	131	134	126	131	124	115	136
Domestic Use	449	439	470	477	486	493	487	493	487	483	511
Net Trade	373	398	407	438	445	447	456	441	459	458	421

Table 62 Oceania Aggregate of Other Countries Modeled as a Group in AGRM – Rice Supply, Utilization, and Net Trade, 2013-2023

	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24
	(Thousand Hectares)										
Area Harvested	3	3	3	2	2	2	2	2	2	2	2
	(Metric Tons per Hectare)										
Yield	5.45	5.47	5.48	5.51	5.53	5.56	5.58	5.58	5.6	5.62	5.63
	(Thousand Metric Tons)										
Production	18	15	14	14	14	14	14	14	14	14	14
Beginning Stocks	5	5	6	6	6	6	7	7	7	7	7
Domestic Supply	23	20	19	20	20	20	20	21	21	21	21
Consumption	277	289	301	314	327	340	352	365	378	390	402
Ending Stocks	5	6	6	6	6	7	7	7	7	7	8
Domestic Use	282	294	307	320	333	346	359	372	385	397	410
Net Trade	-259	-274	-287	-300	-313	-326	-339	-352	-364	-376	-388

Table 63 World Total Rice Supply, Utilization and Net Trade, 2013-2023

	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24
	(Thousand Hectares)										
Area Harvested	160,418	160,457	161,152	161,436	161,700	161,949	162,076	162,251	162,472	162,511	162,644
	(Metric Tons per Hectare)										
Yield	2.95	3	3.03	3.06	3.08	3.11	3.13	3.16	3.18	3.2	3.23
	(Thousand Metric Tons)										
Production	473,470	482,068	488,336	493,434	498,201	503,971	507,689	512,154	516,374	519,523	525,080
Beginning Stocks	107,200	106,526	110,363	115,368	120,285	124,955	129,905	133,721	137,602	140,941	143,015
Domestic Supply	580,669	588,594	598,698	608,802	618,486	628,926	637,594	645,874	653,975	660,464	668,095
Consumption	474,370	478,466	483,566	488,781	493,799	499,290	504,151	508,534	513,317	517,731	521,877
Ending Stocks	106,526	110,363	115,368	120,285	124,955	129,905	133,721	137,602	140,941	143,015	146,464
Domestic Use	580,896	588,829	598,935	609,066	618,755	629,195	637,871	646,136	654,258	660,746	668,341
Residual	-227	-235	-236	-264	-269	-268	-277	-262	-283	-282	-245

Table 64 World Aggregate of Countries Modeled individually in AGRM – Rice Supply, Utilization and Net Trade, 2013-2023

	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24
	(Thousand Hectares)										
Area Harvested	151,828	151,847	152,512	152,781	153,021	153,243	153,338	153,484	153,673	153,679	153,778
	(Metric Tons per Hectare)										
Yield	2.99	3.04	3.07	3.1	3.12	3.15	3.17	3.2	3.22	3.24	3.27
	(Thousand Metric Tons)										
Production	453,753	462,037	468,099	473,008	477,538	483,085	486,562	490,700	494,672	497,475	502,732
Beginning Stocks	105,134	104,336	108,153	113,097	117,968	122,596	127,511	131,283	135,129	138,435	140,475
Domestic Supply	558,887	566,372	576,251	586,106	595,505	605,681	614,073	621,983	629,800	635,910	643,207
Consumption	447,008	450,855	455,547	460,136	464,600	469,546	473,837	477,725	481,986	485,878	489,580
Ending Stocks	104,336	108,153	113,097	117,968	122,596	127,511	131,283	135,129	138,435	140,475	143,895
Domestic Use	551,344	559,007	568,644	578,104	587,196	597,057	605,120	612,854	620,420	626,353	633,475
Net Trade	7,543	7,365	7,607	8,002	8,310	8,624	8,953	9,129	9,380	9,557	9,731

Table 65 World Aggregate of Other Countries Modeled as a Group in AGRM – Rice Supply, Utilization and Net Trade, 2013-2023

	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24
	(Thousand Hectares)										
Area Harvested	8,589	8,611	8,640	8,655	8,678	8,706	8,737	8,767	8,799	8,832	8,866
	(Metric Tons per Hectare)										
Yield	2.3	2.33	2.34	2.36	2.38	2.4	2.42	2.45	2.47	2.5	2.52
	(Thousand Metric Tons)										
Production	19,717	20,031	20,237	20,425	20,663	20,886	21,127	21,454	21,702	22,047	22,348
Beginning Stocks	2,066	2,190	2,210	2,271	2,317	2,359	2,394	2,438	2,473	2,507	2,541
Domestic Supply	21,782	22,221	22,447	22,696	22,980	23,245	23,521	23,891	24,175	24,554	24,889
Consumption	27,361	27,611	28,020	28,645	29,199	29,743	30,314	30,809	31,331	31,853	32,297
Ending Stocks	2,190	2,210	2,271	2,317	2,359	2,394	2,438	2,473	2,507	2,541	2,569
Domestic Use	29,552	29,821	30,290	30,962	31,559	32,137	32,751	33,282	33,838	34,393	34,865
Net Trade	-7,769	-7,600	-7,843	-8,266	-8,578	-8,892	-9,231	-9,390	-9,663	-9,839	-9,977

Table 66 ECOWAS Total Rice Supply, Utilization and Net Trade, 2013-2023

	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24
					(Thousand Hectares)						
Area Harvested	6,336	6,484	6,715	6,879	7,051	7,203	7,360	7,493	7,633	7,784	7,890
					(Metric Tons per Hectare)						
Yield	1.36	1.41	1.46	1.5	1.54	1.58	1.62	1.66	1.7	1.74	1.78
					(Thousand Metric Tons)						
Production	8,607	9,159	9,781	10,305	10,863	11,399	11,944	12,442	12,956	13,541	14,021
Beginning Stocks	1,876	1,681	1,680	1,716	1,754	1,793	1,850	1,886	1,924	1,965	1,992
Domestic Supply	10,483	10,840	11,460	12,021	12,618	13,193	13,794	14,327	14,880	15,505	16,014
Consumption	16,889	17,284	17,798	18,351	18,953	19,772	20,412	21,146	21,877	22,516	23,215
Ending Stocks	1,681	1,680	1,716	1,754	1,793	1,850	1,886	1,924	1,965	1,992	2,024
Domestic Use	16,889	17,284	17,798	18,351	18,953	21,621	22,298	23,070	23,842	24,508	25,239
Net Trade	-6,407	-6,444	-6,338	-6,330	-6,335	-8,429	-8,504	-8,742	-8,962	-9,003	-9,225

Table 67 Projected Rice Milled Yields Per Hectare for the World and Selected Countries, 2013-2023

	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24
	(Metric Tons per Hectare)										
Argentina	4.20	4.34	4.49	4.56	4.63	4.67	4.71	4.76	4.80	4.85	4.89
Australia	7.07	7.05	7.04	7.03	7.04	7.05	7.05	7.07	7.10	7.11	7.11
Bangladesh	2.92	2.92	2.92	2.94	2.97	3.00	3.02	3.05	3.08	3.09	3.12
Brazil	3.39	3.40	3.42	3.43	3.46	3.48	3.49	3.50	3.51	3.52	3.53
Brunei Darussalam	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
Cambodia	1.65	1.70	1.78	1.87	1.91	2.00	2.06	2.12	2.17	2.23	2.27
Cameroon	0.90	0.97	1.07	1.08	1.08	1.09	1.08	1.08	1.09	1.09	1.09
People's Republic of China	4.67	4.80	4.85	4.88	4.92	4.95	4.99	5.01	5.04	5.07	5.10
Colombia	2.99	3.00	3.01	3.02	3.04	3.05	3.07	3.08	3.10	3.11	3.12
Egypt	6.48	6.69	6.77	6.80	6.83	6.86	6.88	6.94	7.00	7.06	7.12
European Union-27	4.62	4.67	4.74	4.81	4.88	4.94	5.01	5.08	5.14	5.21	5.25
Ghana	1.69	1.72	1.75	1.80	1.85	1.89	1.94	1.96	2.00	2.04	2.08
Guinea	1.27	1.34	1.40	1.46	1.50	1.54	1.58	1.62	1.65	1.69	1.72
India	2.37	2.45	2.48	2.51	2.54	2.58	2.60	2.63	2.66	2.67	2.74
Indonesia	3.10	3.14	3.17	3.21	3.26	3.29	3.31	3.34	3.36	3.37	3.39
Iran	2.81	2.83	2.86	2.88	2.91	2.93	2.96	2.98	3.01	3.03	3.06
Iraq	2.17	2.17	2.19	2.20	2.22	2.23	2.24	2.25	2.27	2.28	2.29
Cote d'Ivoire	1.23	1.33	1.43	1.47	1.51	1.55	1.59	1.63	1.67	1.71	1.75
Japan	4.80	4.81	4.81	4.80	4.81	4.80	4.80	4.80	4.80	4.79	4.79
Kenya	1.80	1.82	1.83	1.84	1.84	1.85	1.86	1.86	1.87	1.87	1.87
Lao PDR	1.77	1.80	1.83	1.87	1.93	1.98	2.02	2.07	2.11	2.15	2.17
Liberia	0.78	0.79	0.80	0.80	0.81	0.82	0.83	0.84	0.85	0.85	0.86
Malaysia	2.58	2.58	2.59	2.62	2.64	2.66	2.69	2.73	2.75	2.79	2.82
Mali	2.19	2.23	2.28	2.35	2.41	2.47	2.54	2.59	2.65	2.71	2.77
Mexico	3.74	3.71	3.77	3.81	3.78	3.73	3.75	3.73	3.73	3.77	3.79
Mozambique	0.94	0.95	0.97	0.99	1.01	1.03	1.04	1.05	1.07	1.09	1.11
Myanmar (Burma)	1.69	1.71	1.73	1.74	1.76	1.78	1.80	1.81	1.83	1.85	1.87
Nigeria	1.16	1.22	1.24	1.27	1.31	1.34	1.37	1.41	1.44	1.48	1.51
Pakistan	2.34	2.36	2.36	2.36	2.36	2.37	2.37	2.37	2.37	2.38	2.39
Philippines	2.47	2.48	2.51	2.56	2.62	2.67	2.71	2.77	2.83	2.88	2.93

Table 67 Projected Rice Milled Yields Per Hectare for the World and Selected Countries, 2013-2023, continued

Senegal	3.38	3.57	3.76	3.97	4.19	4.42	4.62	4.82	5.03	5.25	5.43
Sierra Leone	1.25	1.28	1.32	1.37	1.41	1.45	1.50	1.54	1.59	1.64	1.69
South Korea	5.02	5.02	5.03	5.04	5.05	5.05	5.05	5.05	5.05	5.05	5.05
Taiwan	4.14	4.14	4.14	4.14	4.14	4.15	4.15	4.16	4.18	4.21	4.24
Tanzania	1.04	1.05	1.07	1.09	1.11	1.13	1.15	1.17	1.19	1.21	1.23
Thailand	1.88	1.88	1.90	1.92	1.92	1.94	1.96	1.97	1.97	1.97	1.98
Turkey	4.89	4.93	4.99	5.05	5.11	5.17	5.23	5.29	5.34	5.40	5.46
United States	6.02	6.05	6.08	6.11	6.13	6.15	6.17	6.20	6.23	6.25	6.28
Uruguay	5.63	5.74	5.79	5.87	5.91	5.96	6.00	6.05	6.09	6.17	6.25
Vietnam	3.54	3.55	3.58	3.60	3.63	3.66	3.69	3.72	3.75	3.78	3.81
Rest of World	2.30	2.33	2.34	2.36	2.38	2.40	2.42	2.45	2.47	2.50	2.52
World	2.95	3.00	3.03	3.06	3.08	3.11	3.13	3.16	3.18	3.20	3.23

Table 68 Projected Per Capita Rice Utilization for the World and Selected Countries, 2013-2023

	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24
	(Kilograms)										
Argentina	10.4	10.4	10.4	10.4	10.4	10.4	10.4	10.4	10.4	10.4	10.4
Australia	15.5	14.9	14.8	14.6	14.5	14.5	14.3	14.2	14.1	14.1	14.2
Bangladesh	221.4	222.2	224.4	225.2	226.8	228.2	228.2	228.1	228.2	228.4	228.8
Brazil	39.9	39.1	39	39.1	39	39.1	39.1	39.1	39.2	39.1	39.2
Brunei Darussalam	115.1	116.2	117.5	117.7	118.8	121.2	121.4	122.8	123.6	124.9	125.8
Cambodia	251.5	251.7	252	252.3	252.8	253	253.2	254.2	255.2	256.1	256.9
Cameroon	34	33.1	33.5	33.4	33.8	33.7	34.1	35	34.7	34.8	33.9
Canada	10.2	10.6	11.7	12	12.2	12.4	12.6	12.7	12.8	12.9	13.1
People's Republic of China	98.9	98.3	98	97.5	97.1	96.7	96.5	96	95.9	95.6	95.4
Colombia	32	32.2	32.9	34.6	35.2	35.7	35.5	35.1	34.8	34.7	34.5
Cote d'Ivoire	92.1	93	91.5	91.2	91.9	93.1	92.9	93.4	95.2	94.5	95.2
Egypt	49.8	48.8	48.4	48.6	48.5	48.5	48.1	48.1	47.7	47.3	47.9
European Union-27	6.7	6.7	6.7	6.7	6.7	6.7	6.8	6.8	6.8	6.8	6.8
Ghana	35.7	36.4	37.2	38	39.1	41.4	42.5	43.6	44.5	45.3	46.4

Table 68 Projected Per Capita Rice Utilization, World and Selected Countries, 2013-2023, continued

Guinea	132.1	132.9	131.6	132.2	132.7	134	134.7	135.8	137	136.8	137.3
China - Hong Kong	60.8	61.2	61.2	61.6	61.8	62.1	62.3	62.6	62.8	63	64.4
India	75.9	76.2	76.6	77	77.5	77.7	78.1	78.5	78.8	79.1	79.3
Indonesia	160.1	159.4	159.5	158.8	158.5	158.7	158.4	158.2	157.9	157.7	157.3
Iran	43.6	43.8	43.6	44.2	44.2	44.5	44.8	44.6	44.9	45.1	45
Iraq	44.7	44.2	44.8	45.3	45.9	46.2	46.6	46.7	46.9	47.1	47.2
Japan	64.1	63.7	62.8	62.1	61.8	61.6	61.2	60.9	60.8	60.6	60.1
Kenya	11.3	11.4	12.5	12.7	13.2	14.3	15	15.7	16.1	16.3	16.5
Lao PDR	226.5	226.9	227.2	228.5	228.8	229.4	228.9	228.8	230	229.9	231.5
Liberia	97.1	100	100.8	104.7	106.3	109	109.5	110.8	112.1	111.5	113.6
Malaysia	94.2	94.2	93.8	94.5	94.6	94.7	95.1	95.3	95.6	95.7	95.8
Mali	100.1	101.4	101.2	103	104.1	106.3	107.6	108.6	109.3	110.6	111.7
Mexico	7.1	7.2	7.3	7.3	7.4	7.5	7.6	7.6	7.7	7.7	7.7
Mozambique	28.9	26.7	27.6	27.4	27.5	28.5	28.6	29.7	30.5	31.7	32
Myanmar (Burma)	165.4	164.1	163	161.7	161.4	162.1	162.3	162.9	162.6	161.7	162.7
Nigeria	34.9	34.1	34.2	34	33.9	34.4	34.5	34.8	35	35.1	35.1
Pakistan	14.4	14.8	15	15.2	15.2	15.3	15.4	15.3	15.4	15.4	15.4
Philippines	130.9	130.7	129.5	129	128	127.6	127	126.7	126	125.5	124.9
Saudi Arabia	43.9	44.5	45.2	45.9	46.3	46.6	47	47.2	47.5	47.7	48
Senegal	111.9	111.1	111.6	112.3	112.8	113.2	113.5	113.8	114	114.2	114.4
Sierra Leone	184	185.8	187.4	190.2	191.3	193.7	196.1	198.4	201.1	202.5	204.7
Singapore	66.8	65.9	66.3	65.5	64.8	64	63.2	62.4	61.5	60.7	61.9
South Africa	18.4	18.1	18.2	18.1	18.2	18.4	18.4	18.5	18.9	18.7	19.2
South Korea	92.1	90.9	91.2	90.4	90.1	89.4	88.7	87.9	87.7	87.5	86.7
Taiwan	55.4	54.9	54.4	54	53.2	52.5	52.2	51.9	51.6	51.3	51
Tanzania	24.5	25.4	25.8	25.9	26.2	26.8	27	27.4	28	28.3	28.5
Thailand	159.7	158.4	158	157.3	157.1	157.2	157.1	157.3	157.6	157.6	157.8
Turkey	10.4	10.4	10.4	10.3	10.4	10.5	10.2	10.1	10.2	10.2	10.1
United States	12.1	12.5	12.7	12.9	13.2	13.4	13.7	13.7	13.6	13.8	13.4
Uruguay	26.7	25.3	25.5	24.7	24.4	24.3	24	23.8	23.4	22.8	22.2
Vietnam	225.4	224.2	222	222.4	221.5	221.9	222.1	221.1	221	221.3	221.5
Rest of World	22.6	22.5	22.6	22.8	23	23.1	23.3	23.4	23.6	38	23.8
World	66	65.8	65.8	65.8	65.7	65.8	65.8	65.7	65.7	65.7	65.6

Estimates of the Stochastic Baseline Analysis

Charts of Selected Price and Trade Variables Showing the 10th and 90th Percentiles, the Stochastic Mean, and the C.V. of Future Probable Distributions (100 Outcomes from Random Draws)

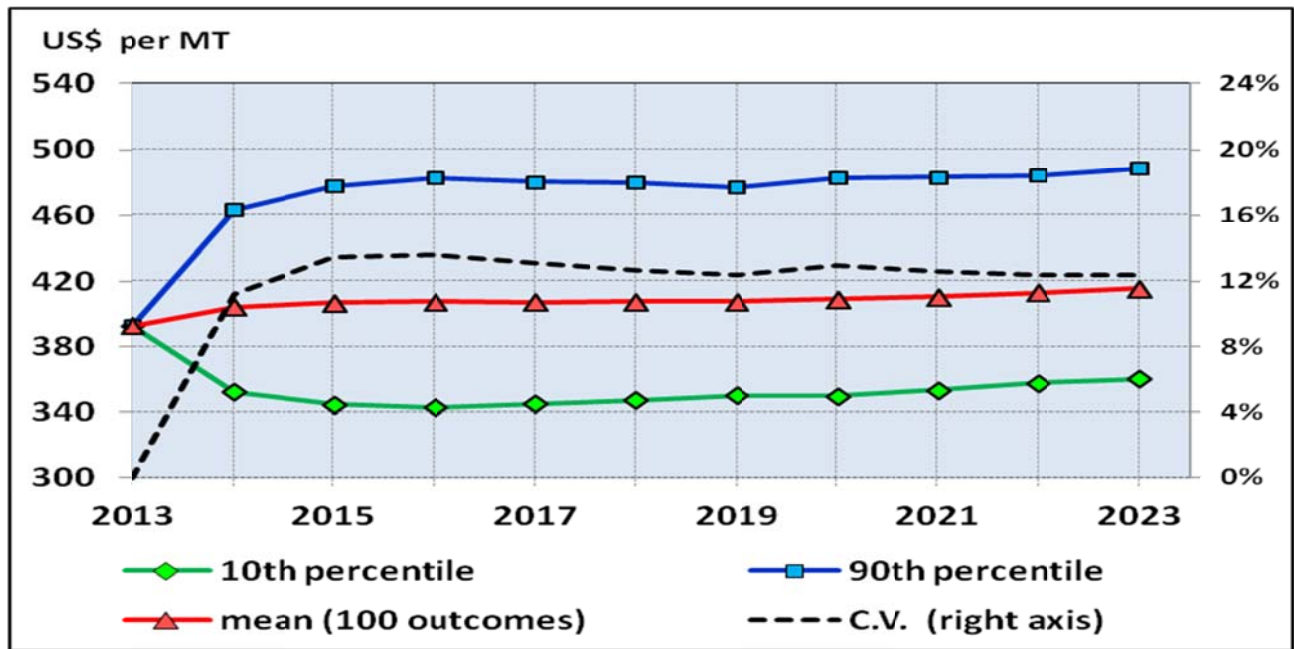


Figure 17 Stochastic Projection of Long Grain Rice International Reference Price

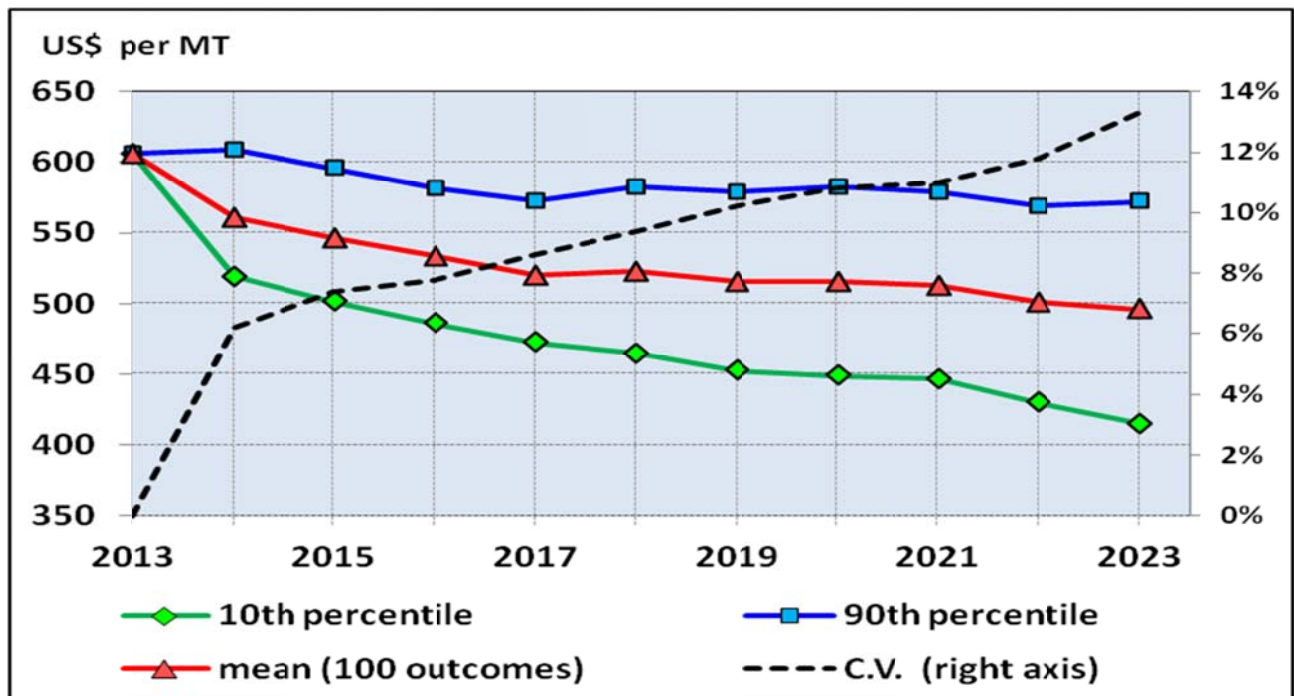


Figure 18 Stochastic Projection of U.S. Long Grain Rice FOB Export Price.

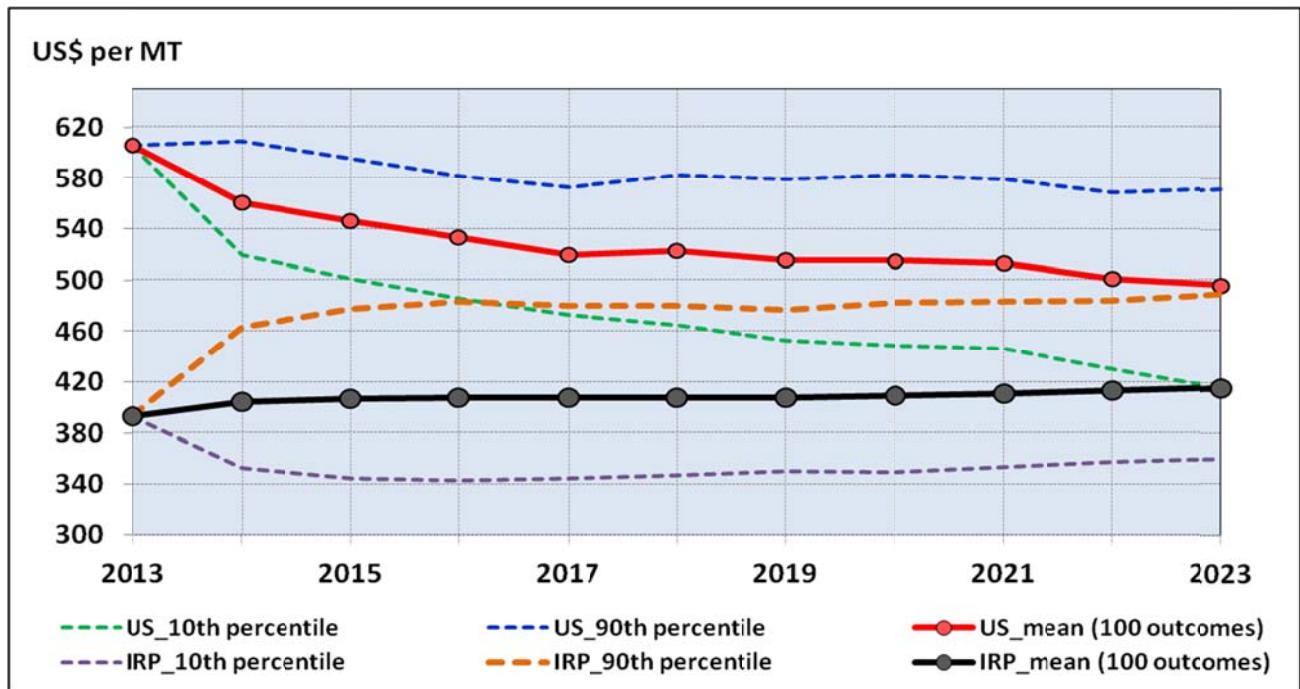


Figure 19 Stochastic Projection Comparisons of International Reference and U.S. Long Grain Rice Export Prices.

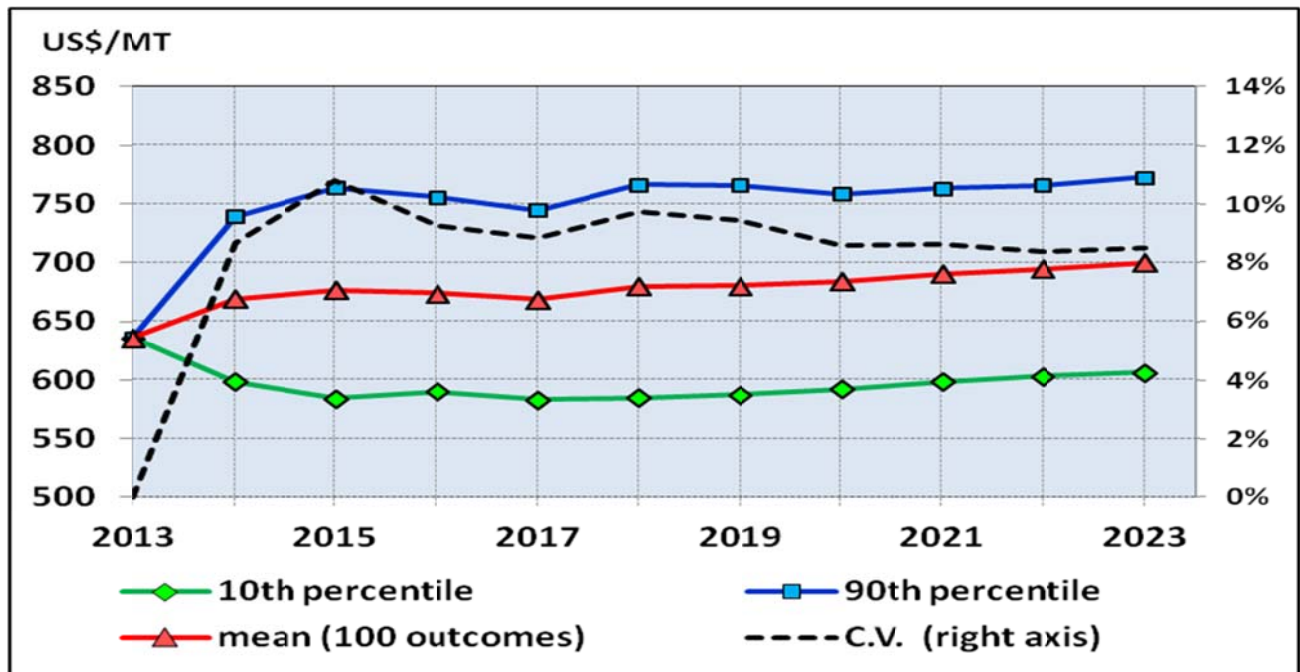


Figure 20 Stochastic Projection of Medium Grain Rice Price, FOB California.

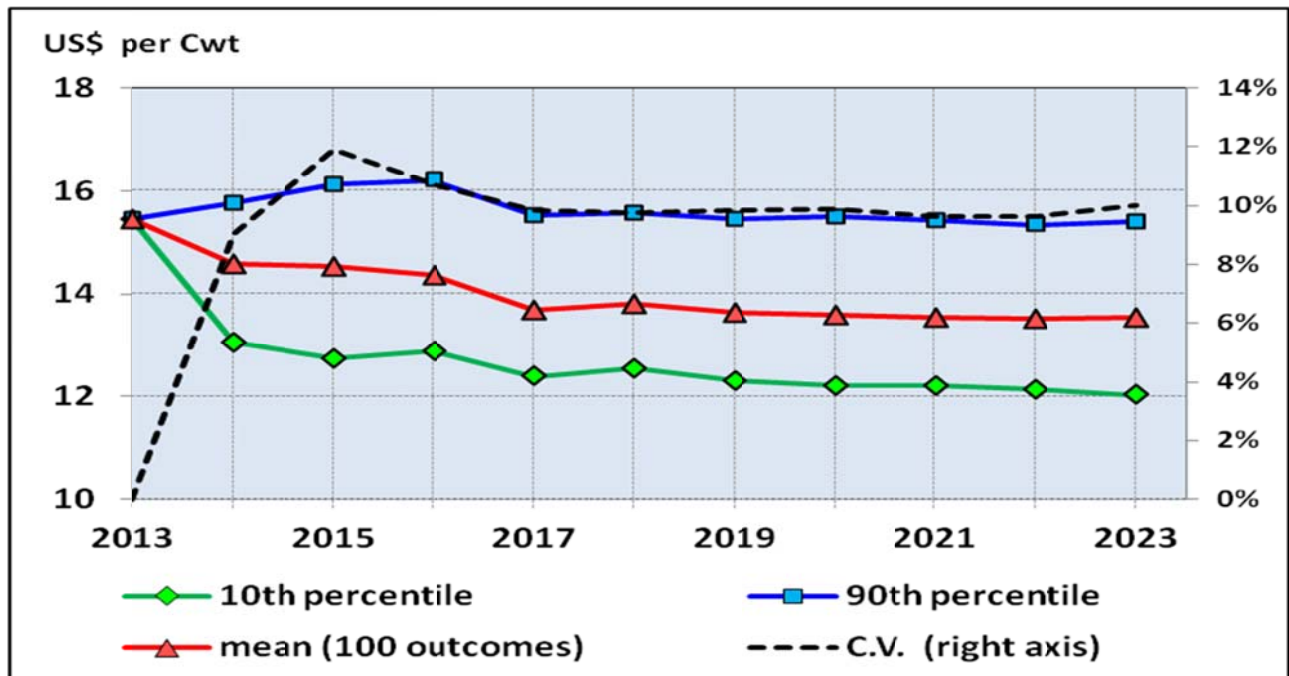


Figure 21 Stochastic Projection of U.S. Season Average All Rice Farm Price.

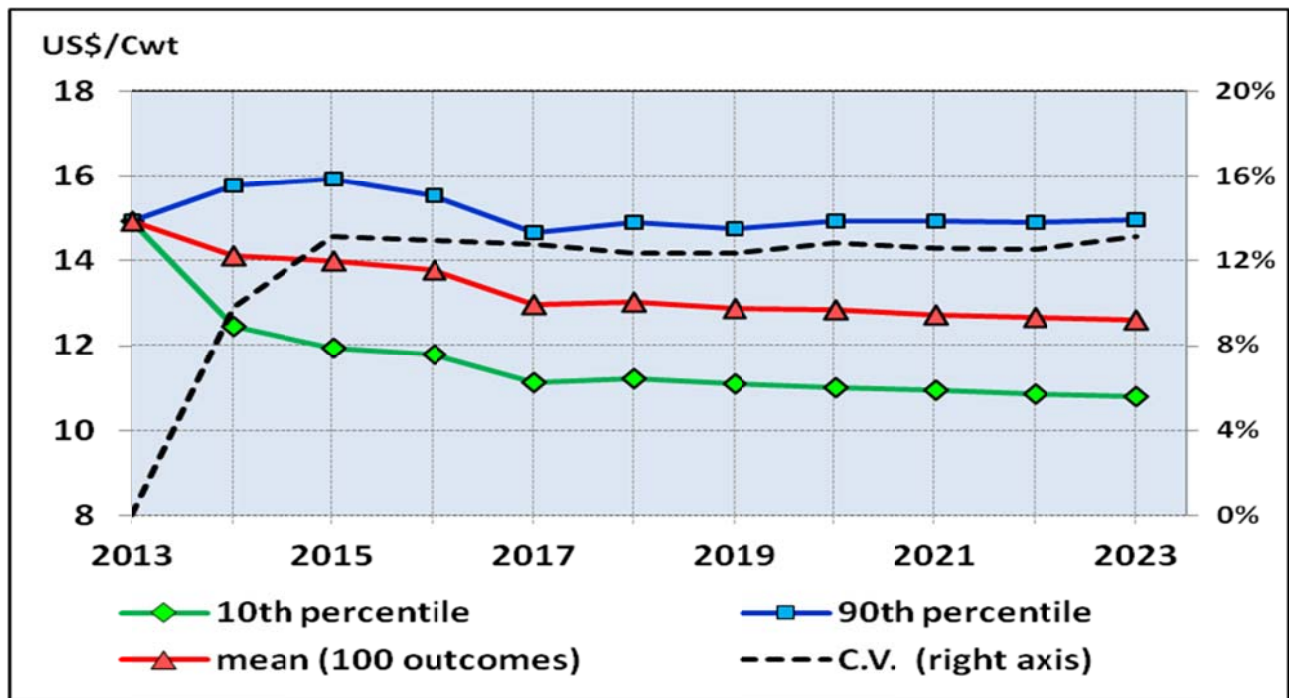


Figure 22 Stochastic Projection of U.S. Long Grain Average Farm Price.

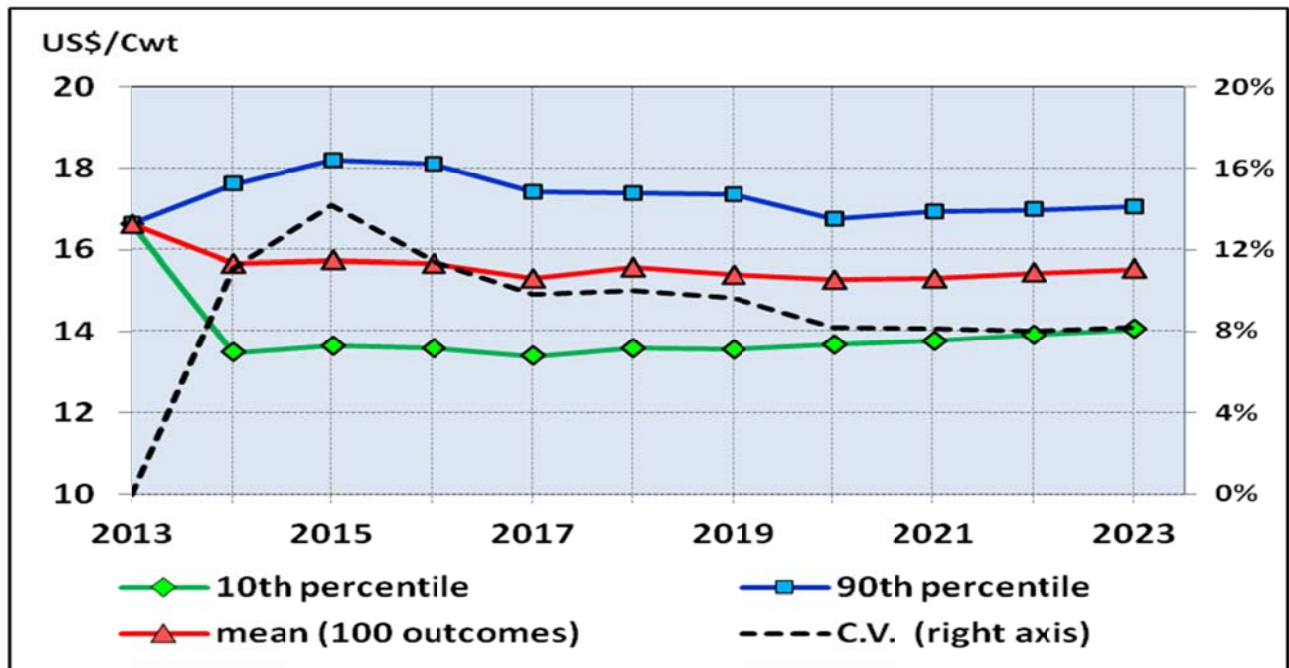


Figure 23 Stochastic Projection of U.S. Medium Grain Average Farm Price.

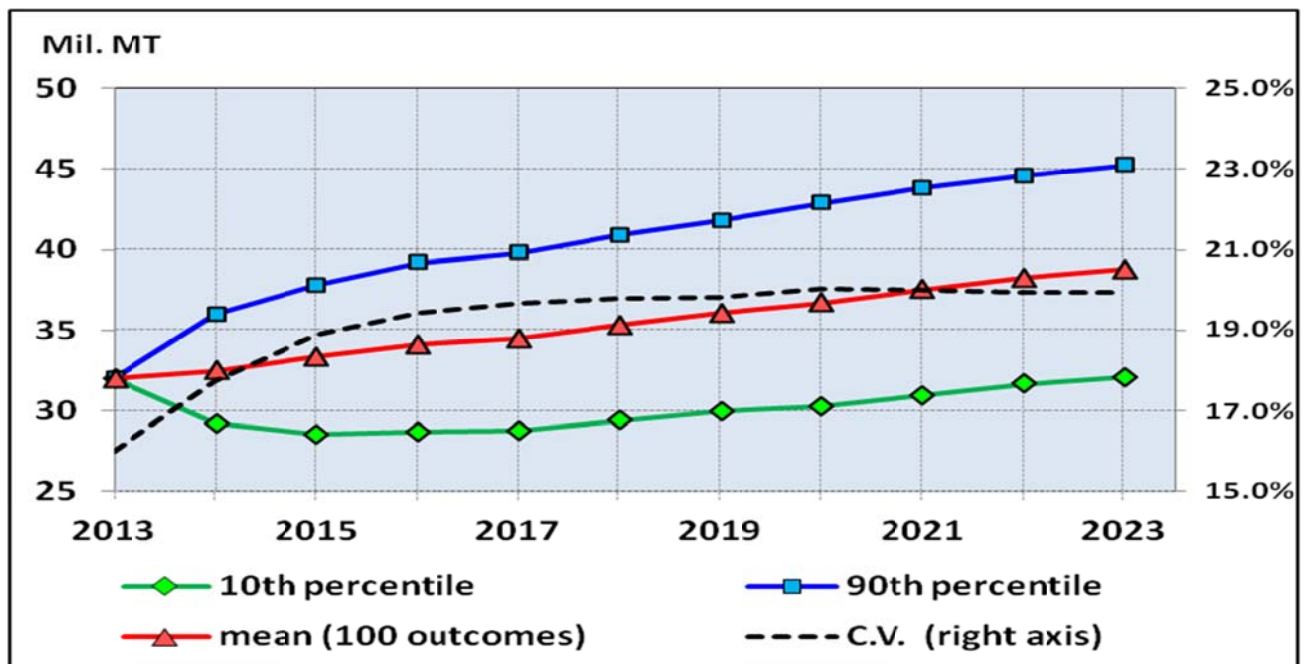


Figure 24 Stochastic Projection of World Rice Net Trade.

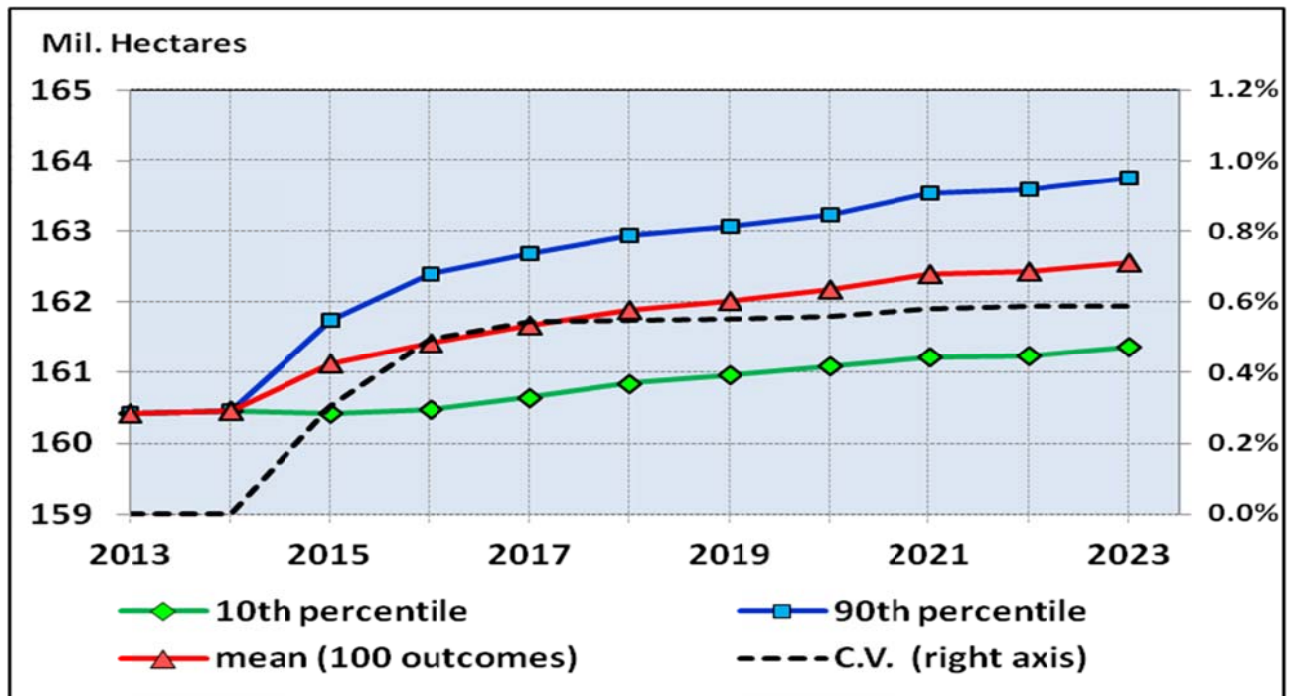


Figure 25 Stochastic Projection of World Rice Area Harvested.

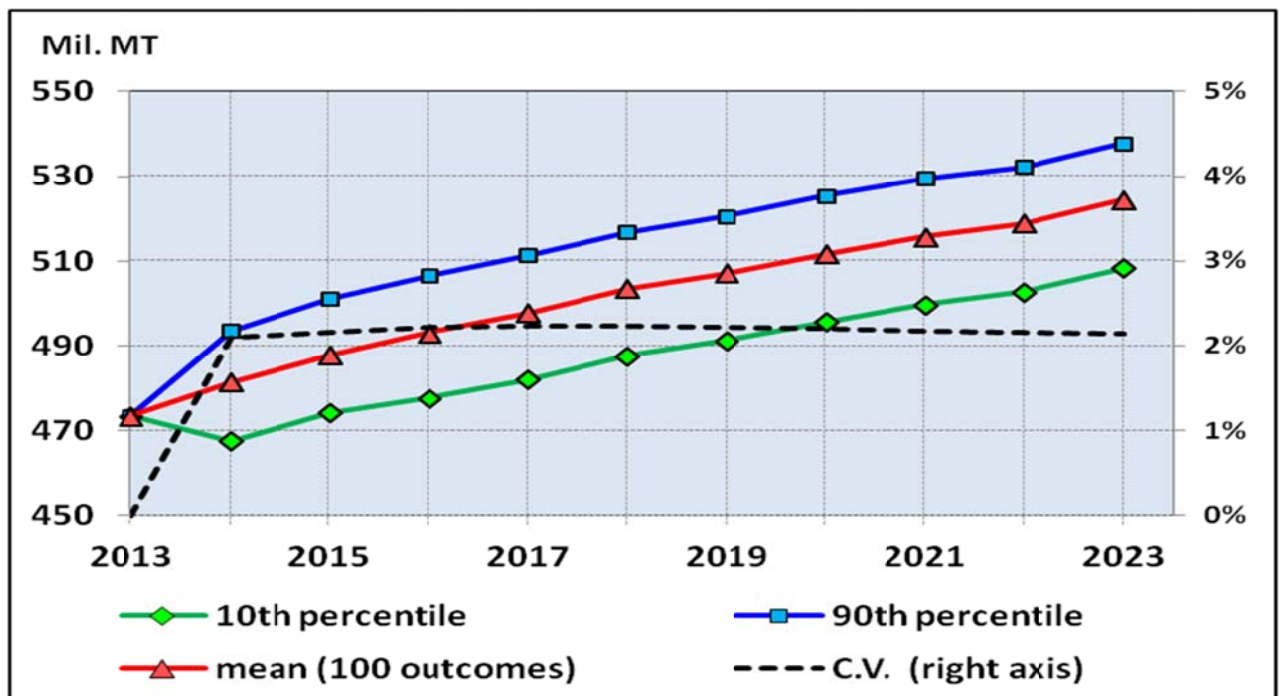


Figure 26 Stochastic Projection of World Rice Milled Production.

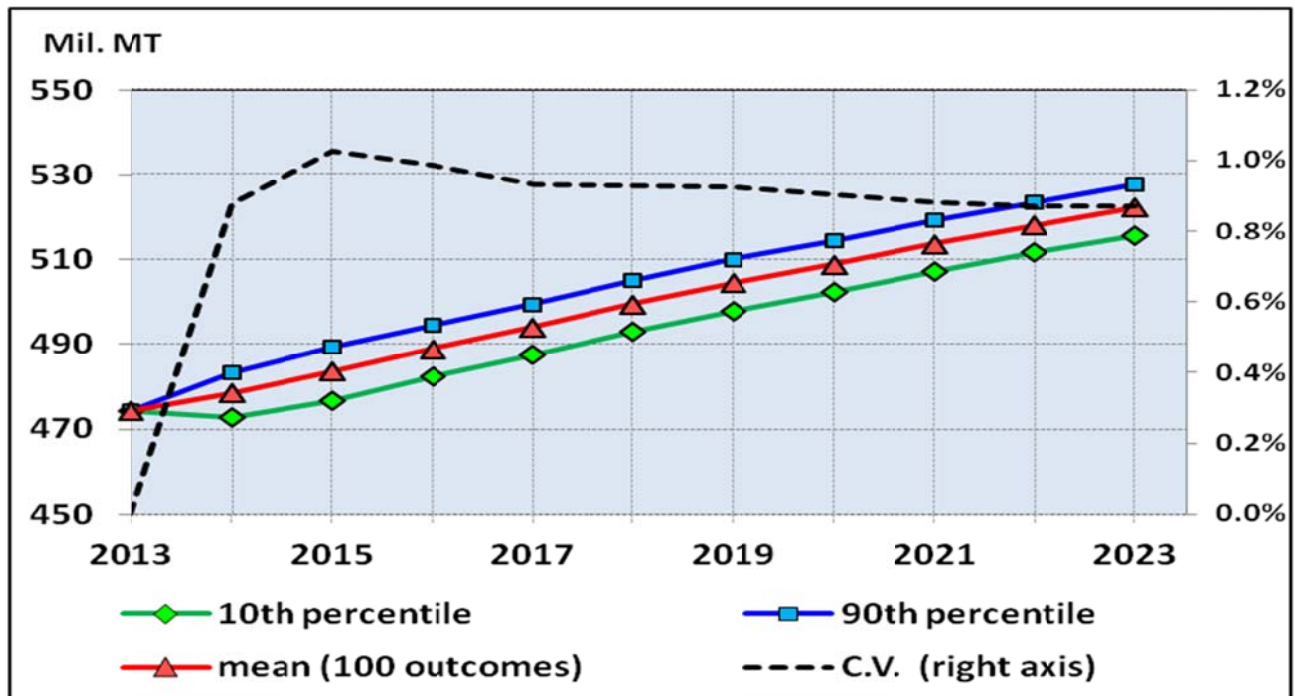


Figure 27 Stochastic Projection of World Total Rice Consumption.

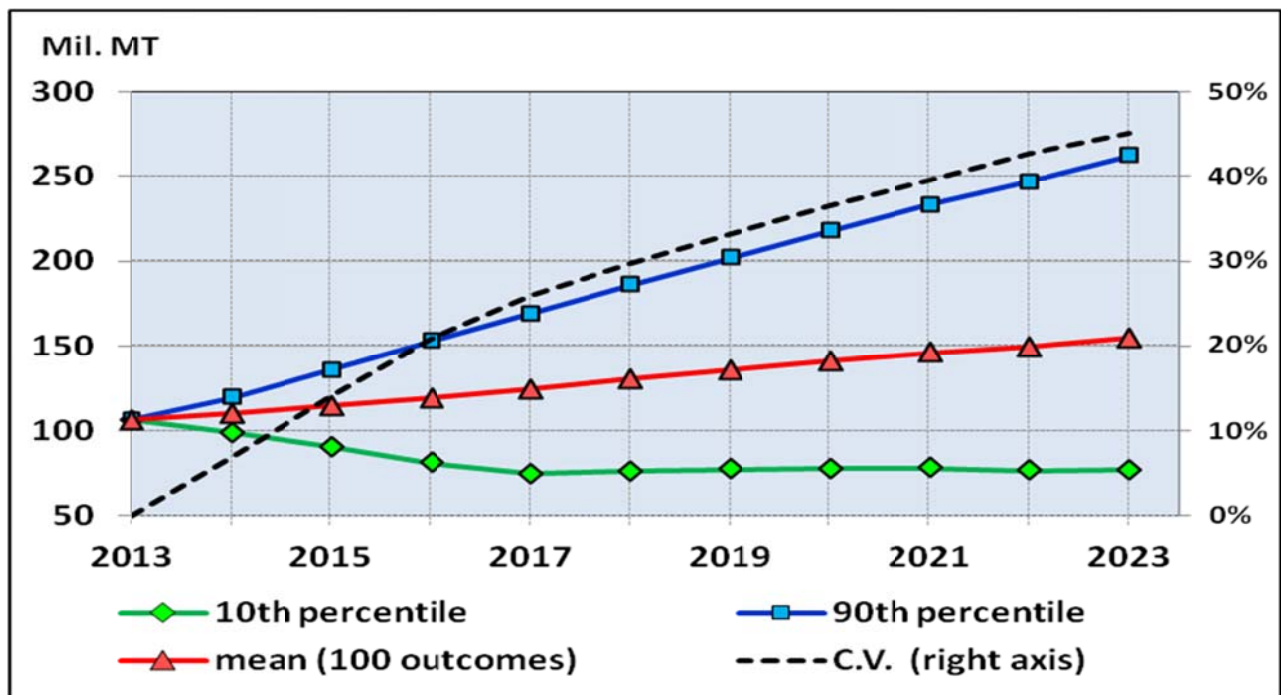


Figure 28 Stochastic Projection of World Rice Ending Stocks.

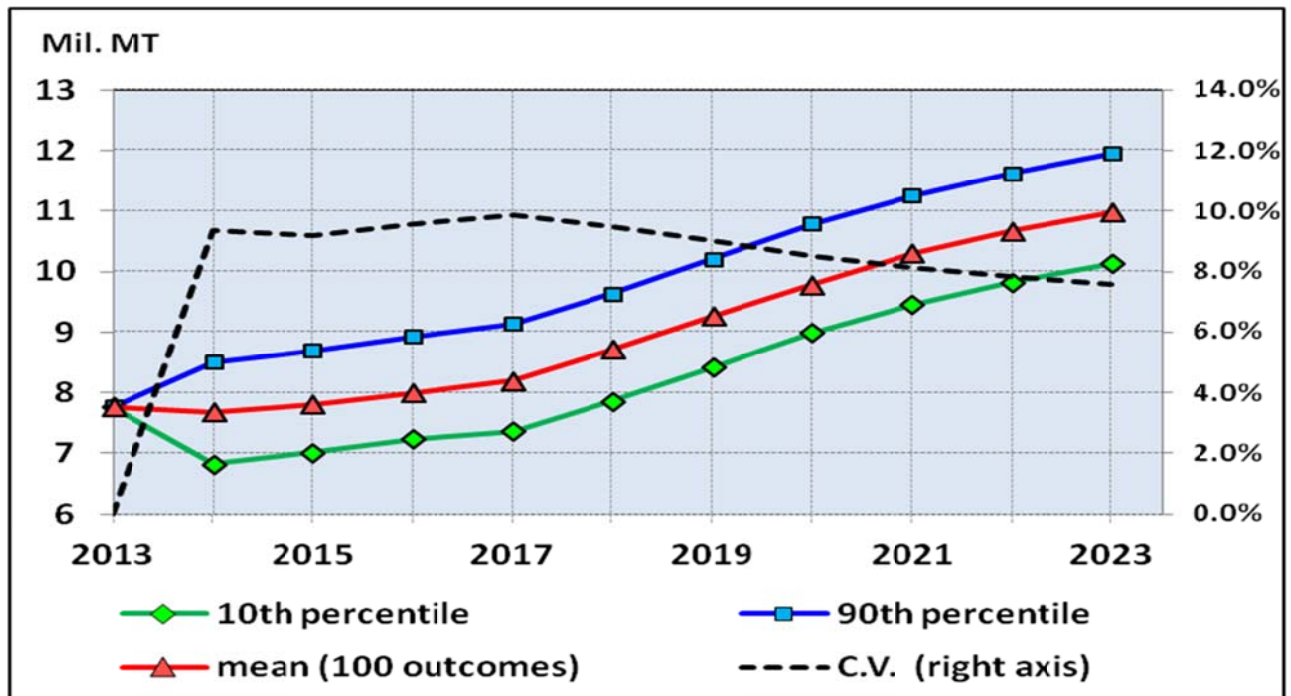


Figure 29 Stochastic Projections of Thailand Net Rice Exports.

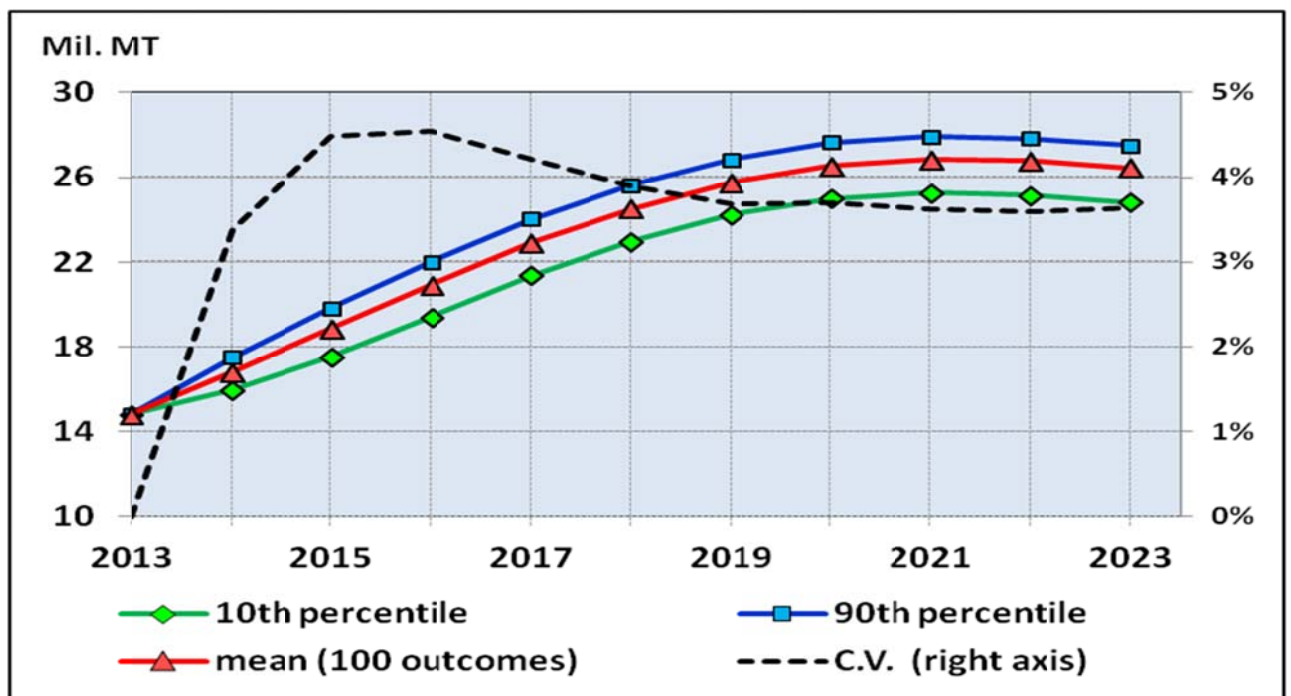


Figure 30 Stochastic Projection of Thailand Rice Ending Stocks.

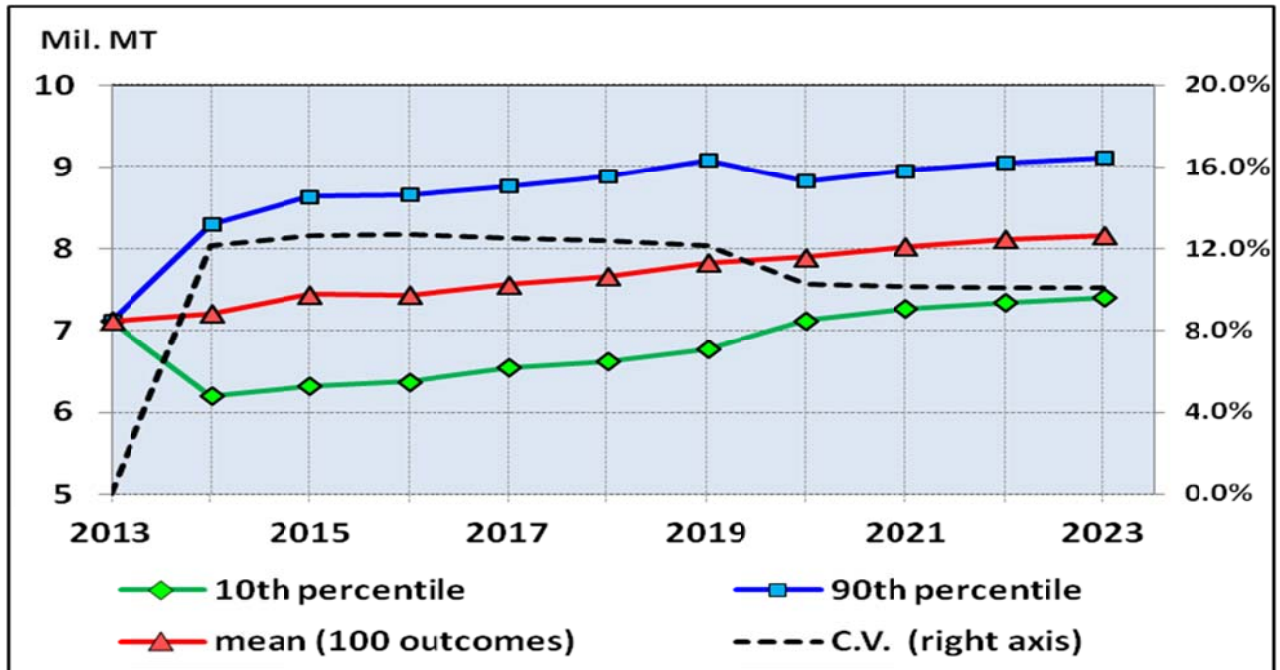


Figure 31 Stochastic Projections of Vietnam Net Rice Exports.

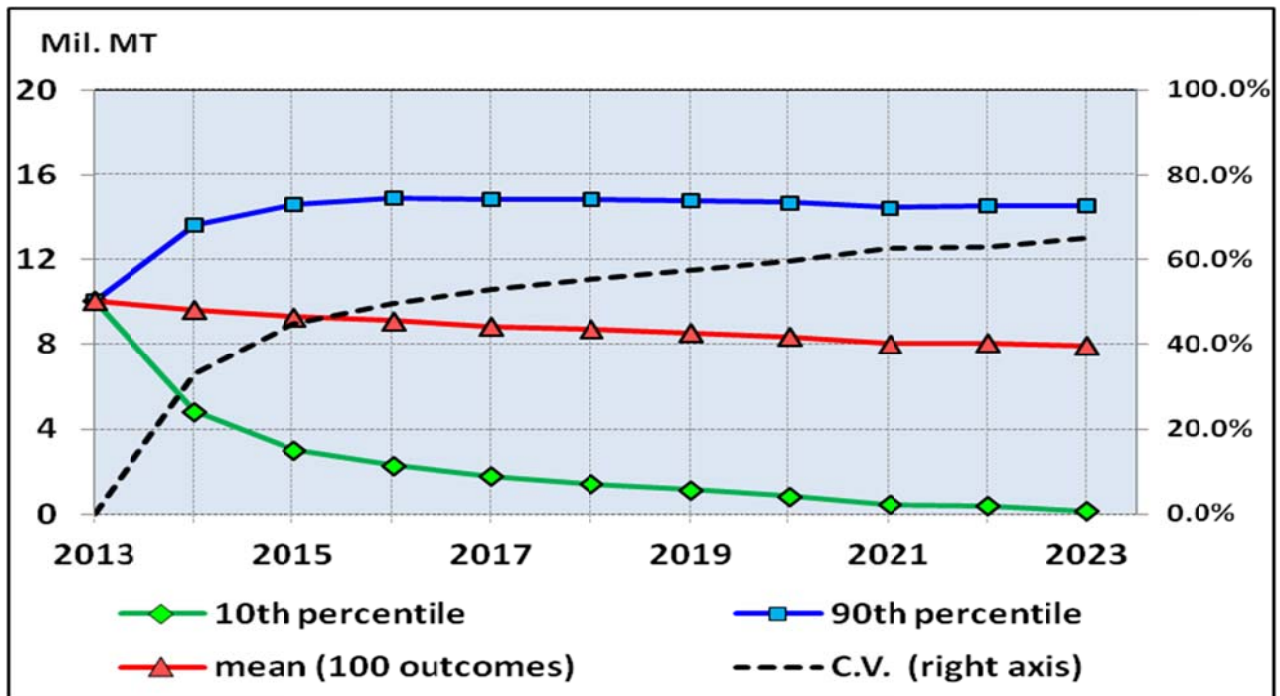


Figure 32 Stochastic Projections of India Net Rice Exports.

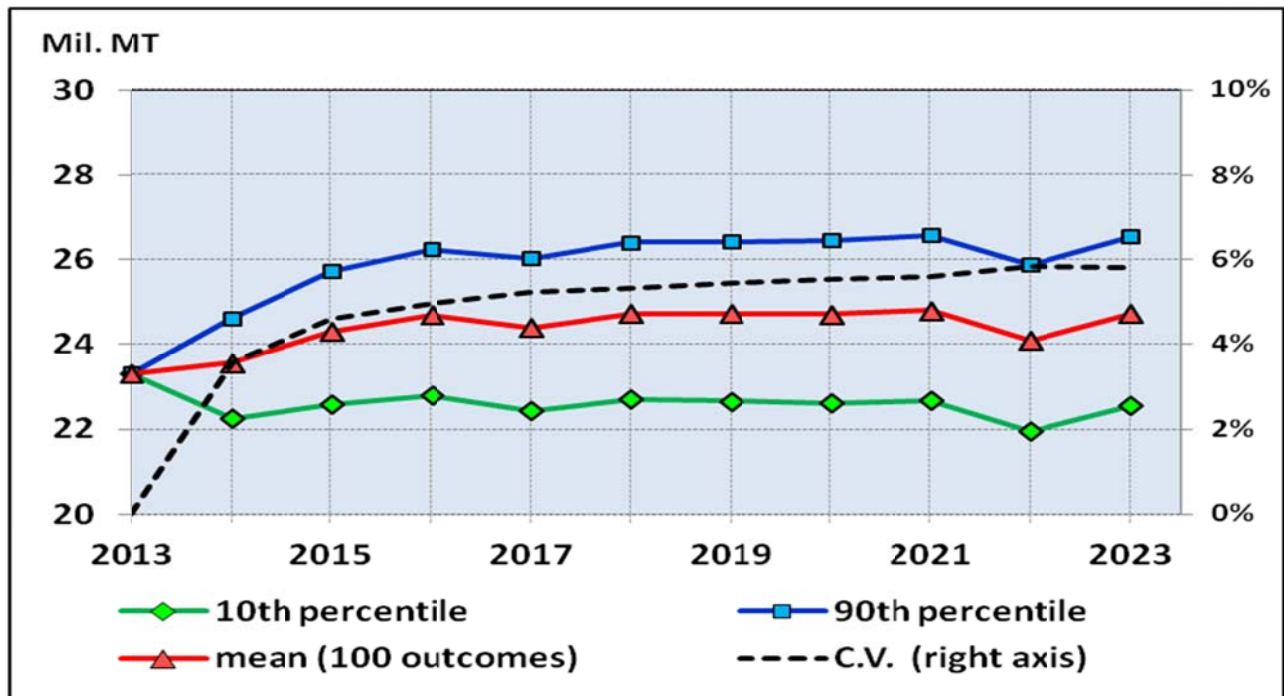


Figure 33 Stochastic Projection of India Rice Ending Stocks.

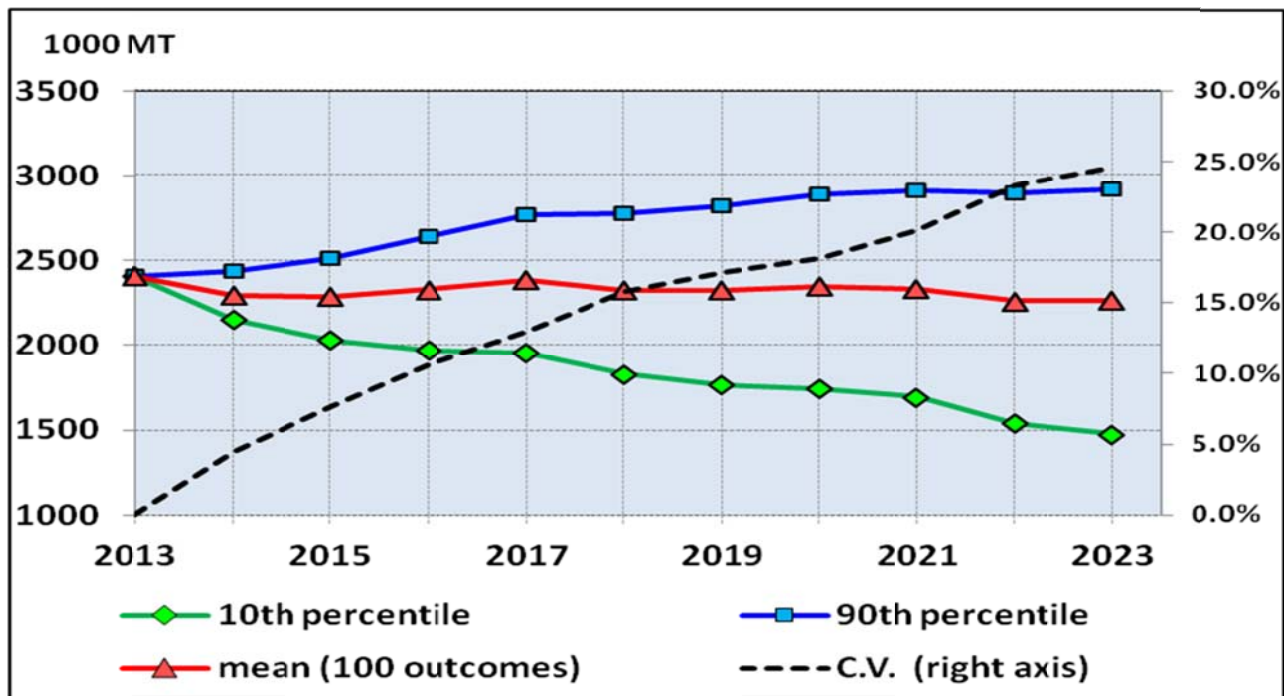


Figure 34 Stochastic Projections of U.S. Net Rice Exports

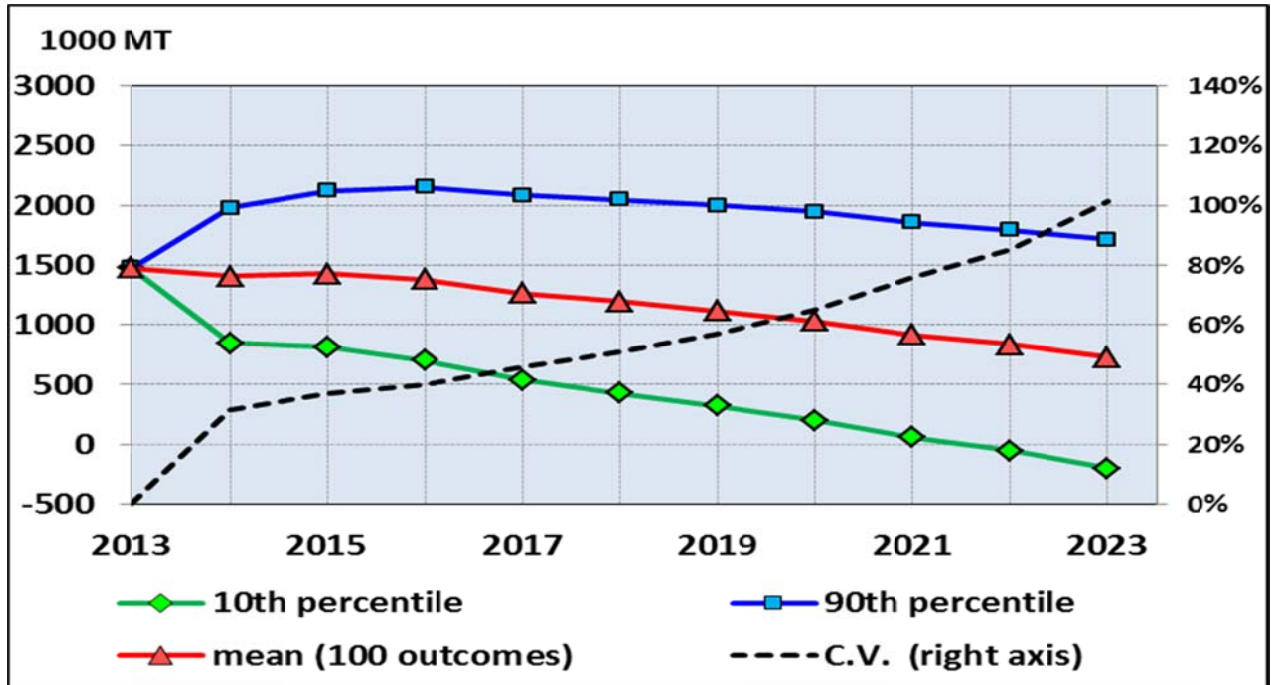


Figure 35 Stochastic Projections of Philippine Net Rice Imports.

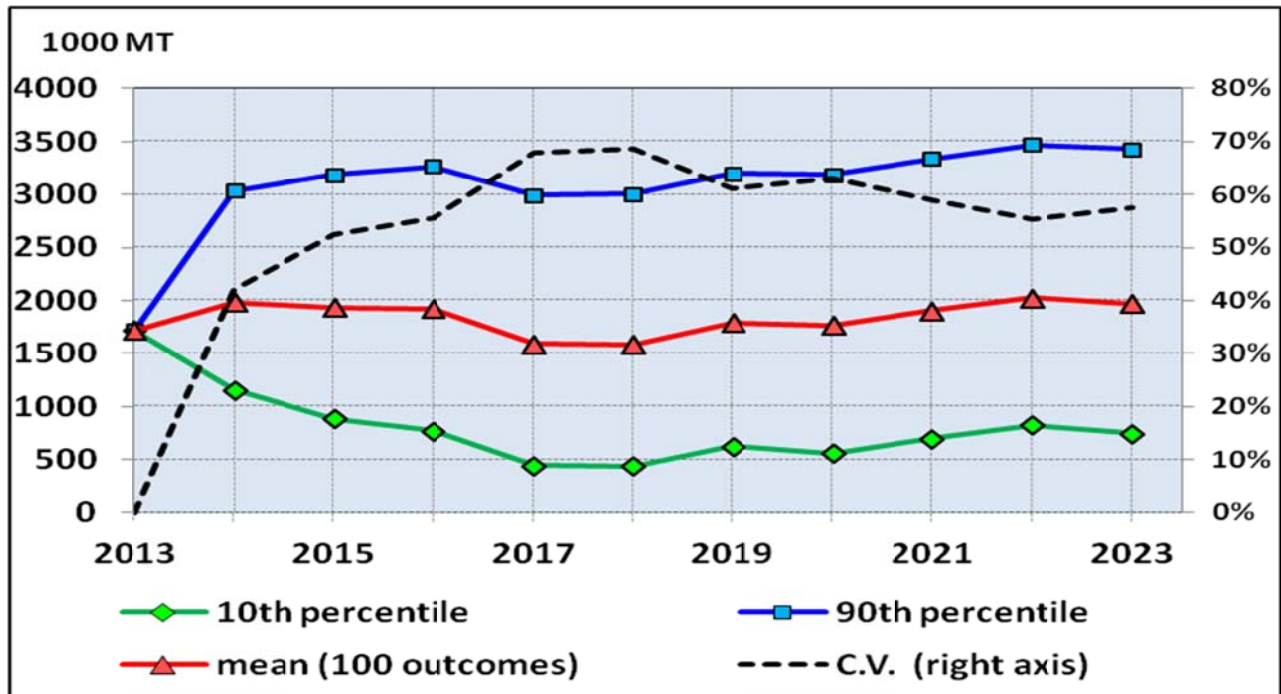


Figure 36 Stochastic Projections of Indonesia Net Rice Imports.

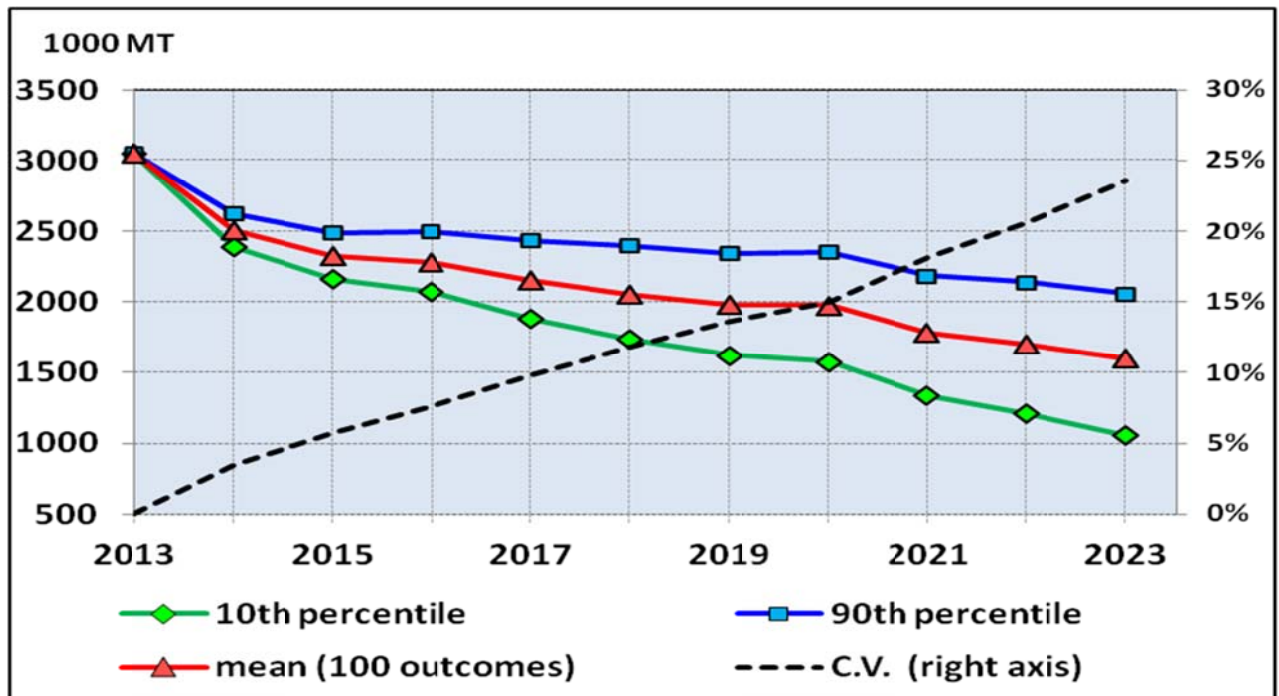


Figure 37 Stochastic Projections of People's Republic of China Net Rice Imports.

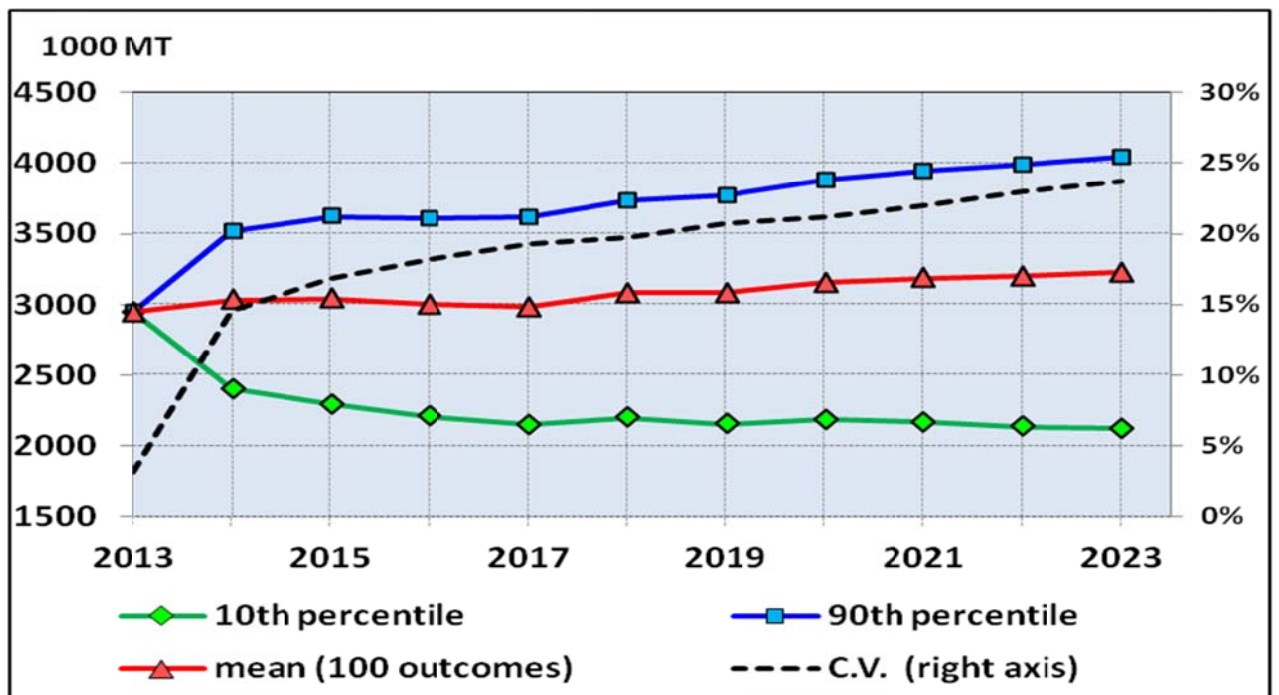


Figure 38 Stochastic Projections of Nigeria Net Rice Imports.

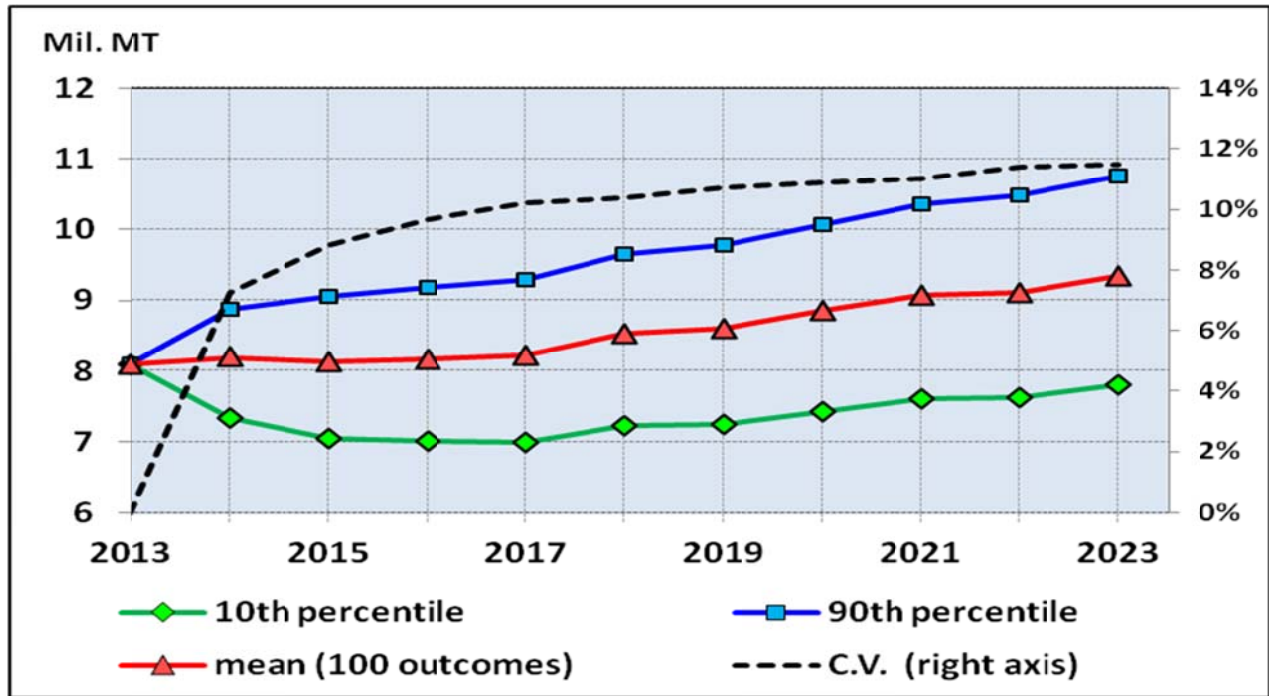


Figure 39 Stochastic Projections of ECOWAS-15 Net Rice Imports.

References

FAPRI U.S. Baseline Briefing Book. FAPRI-MU Report #01-12. March 2012. 68 pages.

Published at:

[http://www.fapri.missouri.edu/outreach/publications/2012/FAPRI MU Report 01 12.pdf](http://www.fapri.missouri.edu/outreach/publications/2012/FAPRI_MU_Report_01_12.pdf)

FAPRI. 2010. FAPRI 2010 U.S. and World Agricultural Outlook. FAPRI Staff Report 10-FSR1.

International Rice Research Institute (IRRI). 2013. "Rice and Poverty." Published at:

http://www.irri.org/index.php?option=com_k2&view=item&layout=item&id=9081&lang=en

Richardson, J.W., K.D. Schumann, and P.A. Feldman. 2008. "Simulation & Econometrics to Analyze Risk." College Station, TX.

Shane, Matthew. Historical and Projected Population and Growth Rates in Population for Baseline Countries/Regions. 1969-2030. U.S. Census Bureau, International Data Base.

<http://www.census.gov/ipc/www/idb/>

Wailes, E.J. and E.C. Chavez. 2011. "World Rice Outlook: International Rice Baseline Projections, 2011-2020". University of Arkansas Department of Agricultural Economics and Agribusiness, Division of Agriculture Staff Paper 2011-02. Published at <http://ageconsearch.umn.edu/handle/112998>

Wailes, E.J. and E.C. Chavez. 2011. "2011 Updated Arkansas Global Rice Model". University of Arkansas Department of Agricultural Economics and Agribusiness, Division of Agriculture Staff Paper 2011-01. Published at <http://ageconsearch.umn.edu/handle/102650>.

Wailes, E. J. and E. C. Chavez. 2013. "U.S. Drought Impacts on the U.S. and International Rice Economies." In: R.J. Norman and K.A.K. Moldenhauer (eds.). B.R. Wells Rice Research Studies 2012. University of Arkansas Agricultural Experiment Station Research Series.

Wailes, E.J. and E.C. Chavez. 2013. "World Rice Outlook: International Rice Baseline Projections, 2012-2022." In: R.J. Norman and K.A.K. Moldenhauer (eds.). B.R. Wells Rice Research Studies 2013. University of Arkansas Agricultural Experiment Station, Research Series 609.

Wailes, Eric J. and Eddie C. Chavez. 2012. "World Rice Outlook: International Rice Baseline Projections with Deterministic and Stochastic Components, 2012-2021". University of Arkansas Department of Agricultural Economics and Agribusiness, Division of Agriculture Staff Paper 01-2012. Published at: <http://ageconsearch.umn.edu/handle/123203>

The New York Times. 2013. "Thailand Set to Sell Off Huge Stockpile of Rice." Published at: http://www.nytimes.com/2013/03/29/business/global/thailand-set-to-sell-off-huge-stockpile-of-rice.html?pagewanted=all&_r=0