

US AGRICULTURAL ACT OF 2014 : IMPLICATIONS FOR THE U.S. AND GLOBAL RICE ECONOMIES

University of Arkansas Eric J. Wailes

Introduction

As the world's fifth largest rice exporting country, agricultural policy in the United States is an important element that affects its competitiveness. I am very pleased to have been asked to present on U.S. farm and food policy and how it is affecting the role and performance of the United States in the global rice economy. In this paper I will first give a brief overview of our most recent 10-year baseline projections of the global rice economy. Then I will provide a summary of the key elements of the Agricultural Act of 2014, which was passed by the U.S. Congress and signed into law by President Obama in February 2014. Despite being over one year ago, many of the key provisions of this legislation are being determined in 2015. I will provide some analysis of the key provisions of the commodity title which is the price and income support framework for U.S. crop producers, including rice.

The Global Rice Economy – 2014 to 2024

This outlook contains baseline rice projections from the Arkansas Global Rice Economics Program (AGREP) for U.S. and international rice economies. The estimates were completed in January 2015 in concert with the Food and Agricultural Policy Research Institute at the University of Missouri, Columbia. The projections presented below were developed using the Arkansas Global Rice Model (AGRM). This 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. We provide estimates of 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 can serve 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. The production, consumption and trade data are from USDA, PS&D. It is generally assumed that current agricultural and trade policies will be maintained over the baseline in the United States and other countries. The projections included in this outlook are based on the information available as of January 2015. In light of the volatility which is a key characteristic of the global rice economy, a stochastic analysis is also estimated but not included in this paper. A greater country detail and a full stochastic analysis will be available by March 2015 at <http://www.uark.edu/ua/ricersch/>

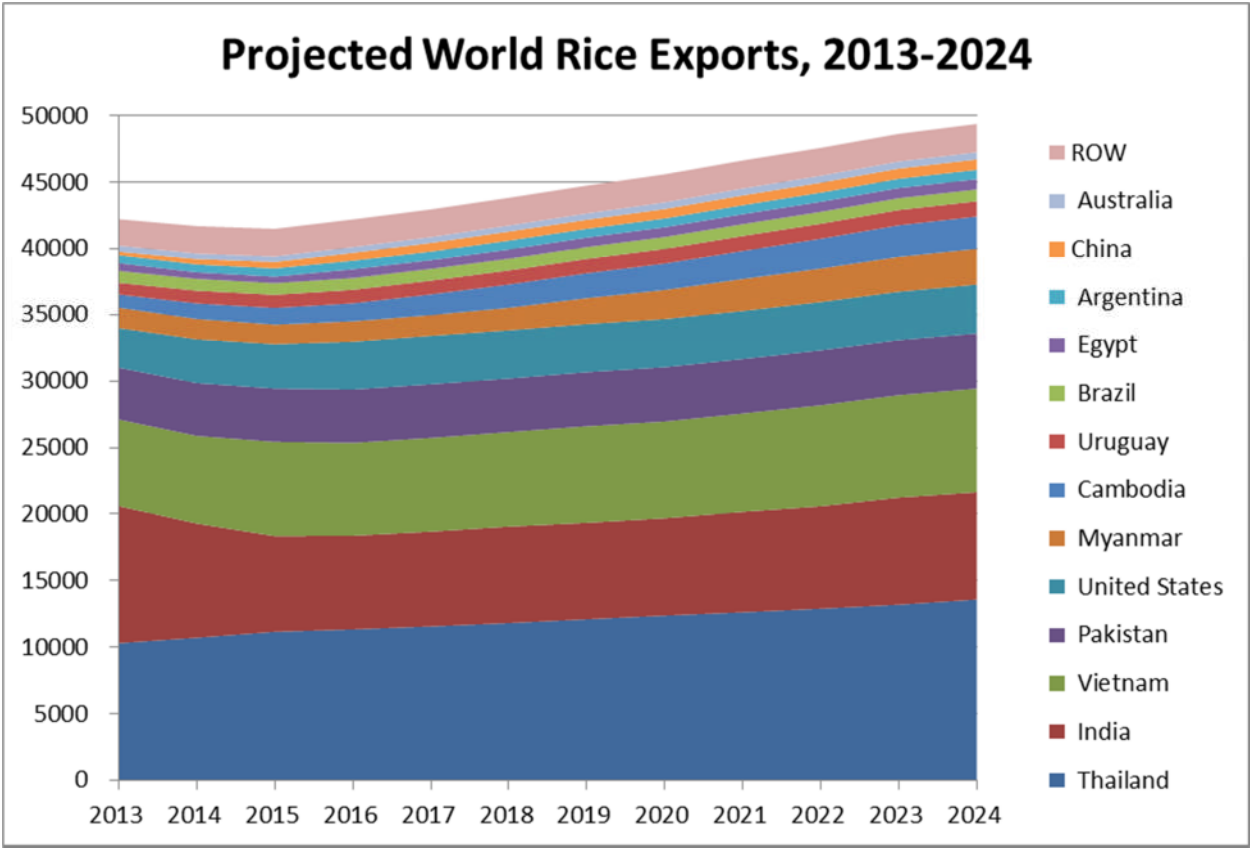
The key factor driving the global rice economy is population growth. Production of rice is expected to meet growth in global consumption, which is projected to grow at an annual rate of only 0.9%. Production area is projected to expand annually by approximately 0.1% while yield growth is approximately 0.8%. Consumption growth is constrained by low or even negative growth rates in per capita consumption in the five largest rice consuming nations-- China, India, Indonesia, Bangladesh and the Philippines. World per capita consumption is expected to decline by one kilogram over the 10 year projection period. Global stocks expand from the 2013/14 level of 107 million metric tons (mmt) to 130 mmt by 2024/25, raising the stocks-to-use ratio from 22.4% to 24.7%.

Table 1. World Rice Supply and Utilization

	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24	24/25
	(Million Hectares)											
Area Harvested	160.9	160.9	161.3	161.9	162.3	162.4	162.5	162.7	162.8	162.8	163.1	163.1
	(Metric Tons per Hectare, milled basis)											
Yield	2.96	2.99	3.01	3.04	3.07	3.09	3.12	3.15	3.17	3.20	3.22	3.24
	(Million Metric Tons, milled basis)											
Production	477.0	481.0	485.5	492.8	498.3	502.3	506.8	511.7	516.5	521.0	525.3	528.1
Beginning Stocks	110.1	107.1	105.2	105.6	108.1	111.1	113.6	115.8	118.1	121.1	124.2	127.7
Domestic Supply	587.1	588.1	590.6	598.4	606.4	613.3	620.4	627.5	634.7	642.0	649.4	655.8
Consumption	478.2	483.0	485.2	490.4	495.4	499.8	504.8	509.5	513.8	518.1	521.9	526.1
Ending Stocks	107.1	105.2	105.6	108.1	111.1	113.6	115.8	118.1	121.1	124.2	127.7	129.9
Domestic Use	585.3	588.2	590.7	598.5	606.5	613.5	620.6	627.6	634.8	642.2	649.6	656.0
Total Trade	42.2	41.7	41.5	42.2	43.0	43.8	44.7	45.6	46.6	47.6	48.6	49.4
	(Percent)											
Stocks-to-Use Ratio	22.4	21.8	21.8	22.0	22.4	22.7	22.9	23.2	23.6	24.0	24.5	24.7

Source: Arkansas Global Rice Model, 2015, University of Arkansas.

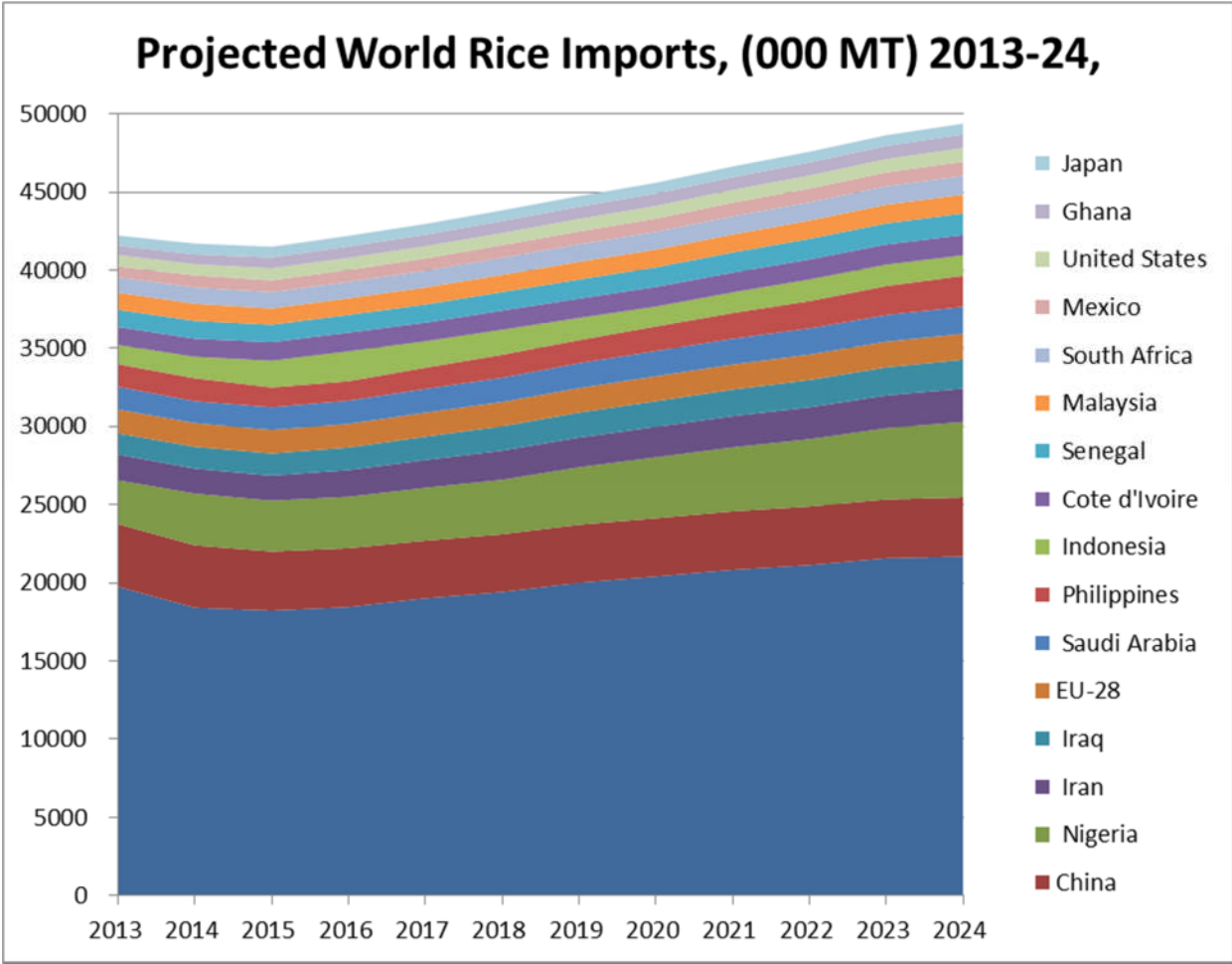
Global rice trade is projected to grow 1.43% annually, from 42.2 mmt in 2013 to 49.4 mmt in 2024 (Annex Table 1). The leading exporters are Thailand, India, Vietnam, Pakistan, and the United States. While global rice exports remain concentrated, the share of the top five exporters is projected to decline from 80% in 2013 to 76% by 2024. Anticipated expansion of exports from Myanmar and Cambodia contribute to less concentration among the top five exporters. Thailand regains its leading exporter role as it disposes of surplus stocks accumulated under the defunct Paddy Pledging Program and as it participates on the global market with competitive pricing. With expansion of export supply out of Southeast Asia however, weather and climatic risks characteristic of this region suggests that there will continue to exist export supply instability.



Source: Arkansas Global Rice Model, January 2015.

The projected top import markets are the People’s Republic of China (PRC), Nigeria, Iran, Iraq, the EU-28, Saudi Arabia, Philippines, Indonesia, Senegal, Cote d’Ivoire and Malaysia (Annex Table 2). These countries, combined, are projected to import a total of 23.2 mmt in 2024, accounting for 46% of global rice imports, up from 18.8 mmt in 2013. An important

emerging rice destination is the 15-country member West African ECOWAS region, increasing net imports from 7.9 mmt in 2013 to 11.3 mmt by 2024.



Source: Arkansas Global Rice Model, January 2015.

As consumption growth slows, projected global rice production capacity is more than sufficient to meet expected demand. Global stocks increase and prices rise nominally, but in real terms are expected to be essentially flat over the 10-year projection.

Table 2. World Rice Prices

	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24	24/25
	(U.S. Dollars per Metric Ton)											
Thai 100% B	428	426	433	455	457	465	469	473	475	478	479	485
U.S. FOB Gulf Ports	603	527	528	527	532	538	538	541	541	537	538	536
U.S. No. 2 Medium FOB CA	816	875	849	818	826	815	822	831	834	825	829	832

The U.S. Agricultural Act of 2014

The U.S. farm bill is a multi-year, omnibus law. It provides authorizing legislation to a broad set of agricultural and food programs¹. It is renewed approximately every five years. While food and agricultural policies are changed or created occasionally through the annual appropriations process or in other stand-alone legislation, the farm bill is the primary legislation for the agricultural and food sector. The Agricultural Act of 2014 (P.L. 113-79) is the current farm bill. It was signed into law on February 7 2014. This legislation is comprised of twelve (12) titles with respective functions:

The 2014 Farm Bill (P.L. 113-79): Functions and Major Issues, by Title

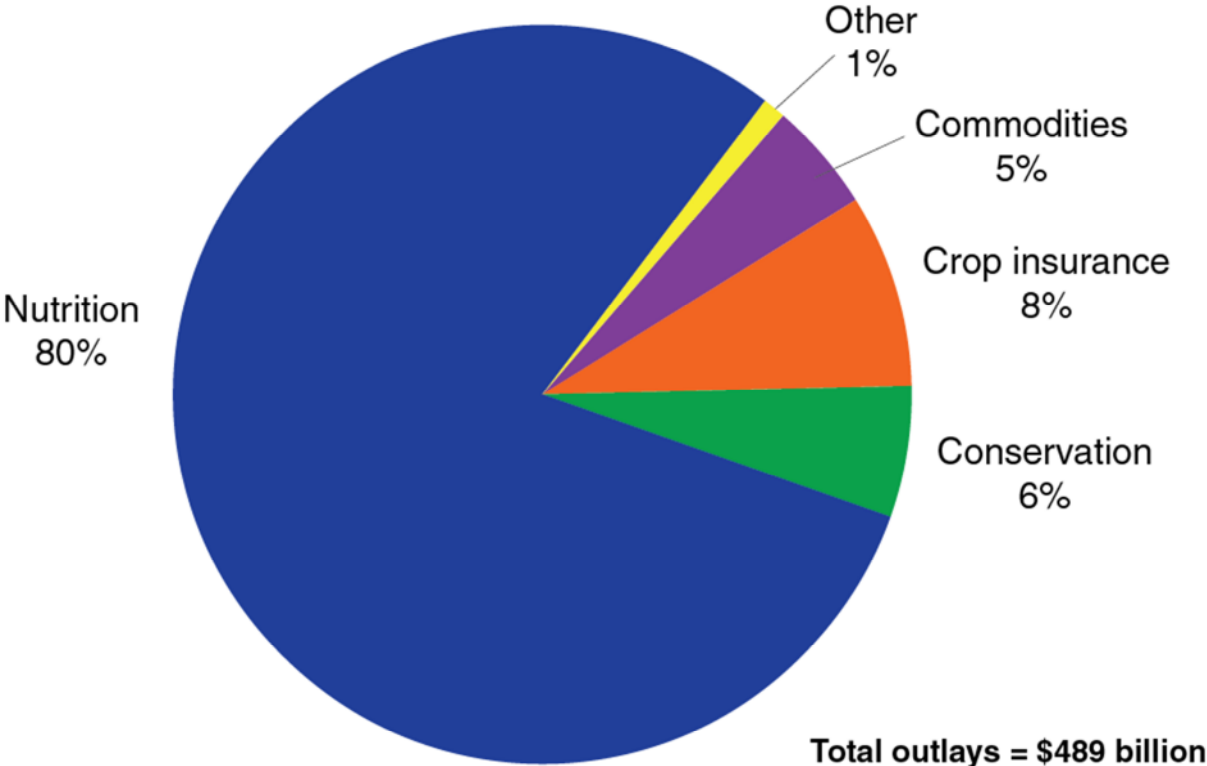
- **Title I, Commodity Programs:** Provides farm payments when crop prices or revenues decline for major commodity crops, including wheat, corn, soybeans, peanuts, and rice. Includes disaster programs to help livestock and tree fruit producers manage production losses due to natural disasters. Other support includes margin insurance for dairy and marketing quotas, minimum price guarantees, and import barriers for sugar.
- **Title II, Conservation:** Encourages environmental stewardship and improved management practices. Working lands programs include Environmental Quality Incentives Program (EQIP) and Conservation Stewardship Program (CSP). Land retirement programs include the Conservation Reserve Program (CRP). Other aid is in the Agricultural Conservation Easement Program (ACEP) and Regional Conservation Partnership Program (RCPP).
- **Title III, Trade:** Provides support for U.S. agricultural export programs and international food assistance programs. Major programs included Market Access Program (MAP) and the primary U.S. food aid program, Food for Peace, which provides emergency and nonemergency food aid, among other programs. Other provisions address program changes related to World Trade Organization (WTO) obligations.
- **Title IV, Nutrition:** Provides nutrition assistance for low-income households through programs including the Supplemental Nutrition Assistance Program (SNAP, formerly known as food stamps) and The Emergency Food Assistance Program (TEFAP). Also supports the distribution of foods in schools.
- **Title V, Credit:** Provides federal direct and guaranteed loans to farmers, and loan eligibility rules and policies.
- **Title VI, Rural Development:** Supports business and community programs for planning, feasibility assessments, and coordination with other local, state, and federal programs. Programs include grants and loans for infrastructure, economic development, broadband and telecommunications, among other programs.
- **Title VII, Research, Extension, and Related Matters:** Supports a wide range of agricultural research and extension programs that help farmers and ranchers become more efficient, innovative, and productive. Other types of research programs include biosecurity and response, biotechnology, and organic production.
- **Title VIII, Forestry:** Supports forestry management programs run by USDA's Forest Service.
- **Title IX, Energy:** Supports the development of farm and community renewable energy systems through grants, loan guarantees, and procurement assistance initiatives. Provisions cover the production, marketing, and processing of biofuels and biofuel feedstocks, and research, education, and demonstration programs.
- **Title X, Horticulture:** Supports specialty crops—fruits, vegetables, tree nuts, and floriculture and ornamental products—through a range of initiatives, including market promotion; plant pest and disease prevention; and public research; among other initiatives. Also provides assistance to support certified organic agricultural production.
- **Title XI, Crop Insurance:** Enhances the permanently authorized federal crop insurance program. New plans include Stacked Income Protection (STAX) for cotton and Supplemental Coverage Option (SCO) for other crops.
- **Title XII, Miscellaneous:** Programs not covered in other titles, including provisions affecting livestock and poultry production and limited-resource and socially disadvantaged farmers, among other provisions.

Source: Congressional Research Service, Report 22131. P. 2

¹ See CRS Report RS22131 What is the Farm Bill? At: <http://fas.org/sgp/crs/misc/RS22131.pdf>

The 2014 farm bill, in effect for fiscal years 2014 through 2018, made major changes in rules, regulations and funding of the commodity title, it expanded crop insurance, consolidated conservation programs, revised nutrition assistance and authorized funding for a large number of U.S. Department of Agriculture (USDA) discretionary programs. The Congressional Budget Office (CBO) is responsible for estimating the costs and changes in costs of all legislation. Their estimates of the funding of mandatory programs in the 2014 farm bill are presented in the following graphic.

Projected outlays under the 2014 Farm Act, 2014-2018



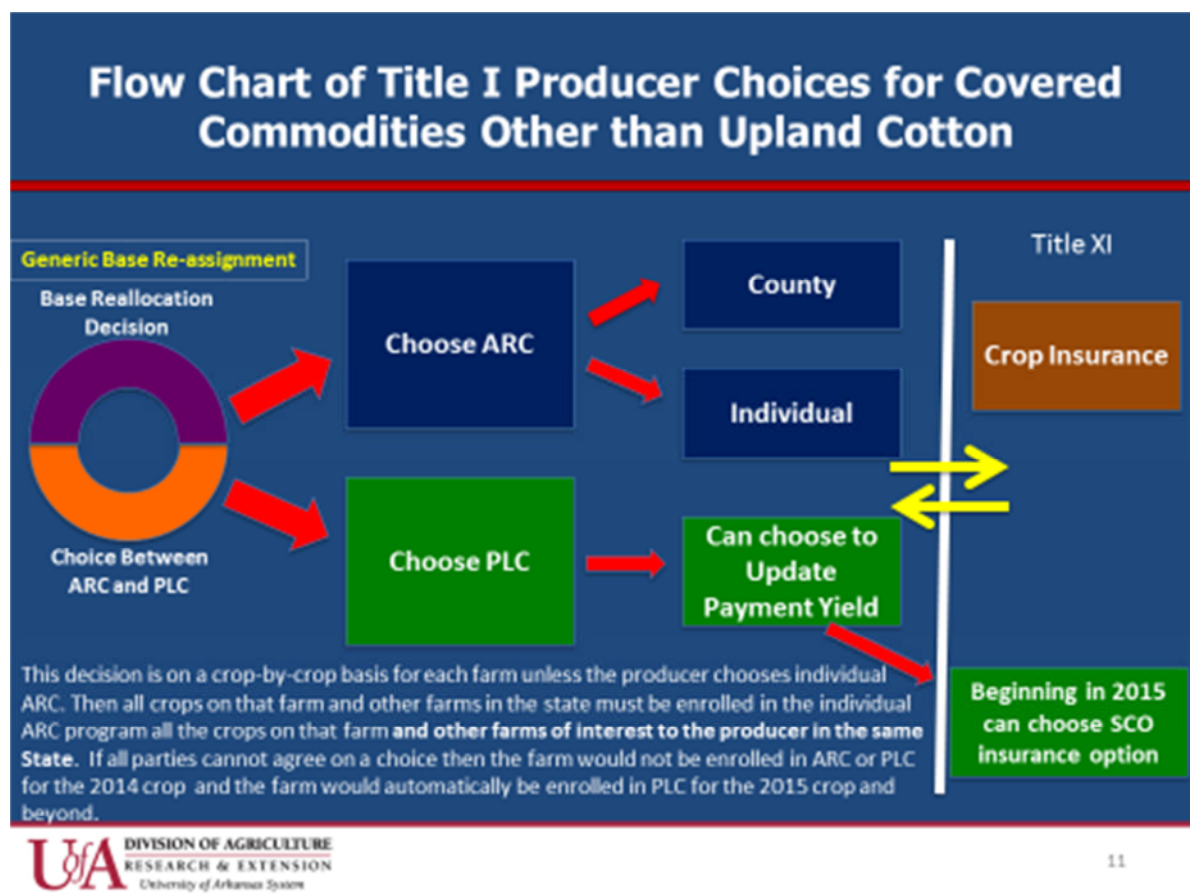
Source: USDA Economic Research Service using data from Congressional Budget Office, Cost Estimates for the Agricultural Act of 2014, Jan 2014.

The 2014 Farm Bill and the US Rice Sector

Of greatest importance to the U.S. rice sector are Title I Commodities and Title XI Crop Insurance. In Title I the 2014 farm bill eliminated the Direct Payment program along with the Countercyclical Payments (CCP) and the Average Crop Revenue Election (ACRE). It created two new programs—the Price Loss Coverage (PLC) and the Agriculture Risk Coverage (ARC). These two programs are rather similar to the repealed CCP program in the case of the

PLC, and the ACRE program in the case of the ARC. But most importantly for the U.S. rice sector, the elimination of the Direct Payment program was a significant economic (US \$ 400 million annually) and political loss. Under the previous program (2008-2013), market prices were significantly higher than the countercyclical “target price” for rice at US\$ 11.50/cwt and therefore this program generated no payments. Similarly the ACRE program was of little value to the U.S. rice sector because it was a revenue loss program that paid when revenue (price multiplied by yield) fell below a moving average benchmark. Direct payments were the only form of price and income support for the U.S rice sector. Because the direct payments were decoupled to production decisions, they were also consistent with WTO green box domestic support. Direct payments were certain. So the major change in the commodity title is a move again from decoupled certain support to a probabilistic payment that is now more coupled to the production decision, even though payments are made on base acres rather than actual acres planted.

The framework of the new commodity program choice for producers is reflected in the following graphic.



All farmers have until March 31, 2015 to decide which program they will choose. They are entitled to choose either PLC or County ARC on a crop-by-crop, farm-by-farm basis. The other option is an Individual ARC option which must apply to all crops on a given farm. Our analysis for Arkansas rice farm suggests that US rice farmers would be far more likely to benefit from the PLC program rather than the ARC. Briefly these two programs provide support for either market prices below a reference price in the case of PLC, or for crop revenue which falls below a benchmark based on a previous 5-year moving average for a shallow loss in the range of 76% to 86% below the benchmark revenue level.

More precisely the payments are calculated as follows:

PRICE LOSS COVERAGE (PLC) PAYMENTS

- Price loss coverage payment is received if the **effective price** for the covered commodity for the crop year *is less than* the **reference price** for the covered commodity for the crop year.
- The **effective price** for a covered commodity for a crop year shall be *the higher of*:
 - (1) the *national average market price* received by producers during the 12-month marketing year for the covered commodity, or
 - (2) the *national average loan rate* for a marketing assistance loan for the covered commodity in effect for such crop year (*\$6.50/cwt for rice*).

- The **PLC payment rate** shall be equal to the *difference* between:
 - (1) The **reference price** for the covered commodities, are as follows:

Long grain rice, cwt:	\$14.00
Medium grain rice, cwt:	\$14.00
Medium grain rice, (japonica),cwt.	\$16.10
Wheat, bu:	\$5.50
Corn, bu:	\$3.70
Grain sorghum, bu:	\$3.95
Barley, bu:	\$4.95
Oats, bu:	\$2.40
Soybeans, bu:	\$8.40

Other oilseeds, cwt:	\$20.15
Dry peas, cwt:	\$11.00
Lentils, cwt:	\$19.97
Small chickpeas, cwt:	\$19.04
Large chickpeas, cwt:	\$21.54
Peanuts, ton:	\$535.00

AND (2) The **effective price** for the covered commodity.

- The **payment yield** is established under the Food, Conservation and Energy Act of 2008. A farmer can do *one-time* update the payment yield for a crop to 90% of the five year (2008-2012) planted acres average excluding years in which the planted acreage was zero. For any of the five years 2008-2012, a plug of 75% of the average county yield can replace the yield on the farm if it is lower than this value.
- The **payment acres** are equal to *85% of the base acres* for the covered commodity (*cannot exceed* total farm base acres).
- The **PLC payment amount** for the crop year shall be equal to the *product* of:
 - (1) The payment rate; (2) The payment yield; and (3) The payment acres, for the covered commodity.

AGRICULTURE RISK COVERAGE (ARC) PAYMENTS

- Agricultural risk coverage payment is received if the **actual crop revenue** for the crop year *is less than* the **agriculture risk coverage guarantee** determined for the crop year. Separate calculations are made for irrigated and non-irrigated commodities.
- Under the *county coverage*, the **actual crop revenue** for a crop year shall be equal to the *product* of:
 - (1) the actual average county yield per planted acre for the covered commodity; and
 - (2) *the higher of*: (i) the *national average market price* received by producers during the 12-month marketing year for the covered commodity, or (ii) the *national average loan rate* for the covered commodity.
- Under the *individual coverage*, the **actual crop revenue** for a crop year shall be based on the producer's share of all covered commodities planted on all farms for which

individual coverage has been selected; and in which the producer has an interest to be determined as follows:

(a) For each covered commodity, the *product* obtained by multiplying the total production and *the higher of*: (i) the *national average market price* received by producers during the 12-month marketing year, or (ii) the *national average loan rate*;

(b) The *sum of the amounts* determined under (a) above for all covered commodities on such farms;

(c) The *quotient* obtained by dividing the *amount* determined under (b) above by the *total planted acres* of all covered commodities on such farms.

- The **agricultural risk coverage guarantee** for a crop year for a covered commodity shall equal *86 percent of the benchmark revenue*.

- Under the *county coverage*, the **benchmark revenue** shall be the *product* of:
 - (1) the *Olympic average county yield* for the most recent 5 crop years (*cannot be lower than 70% of transitional yield* for any year); and
 - (2), the *Olympic national average market price* received by producers during the 12-month marketing year for the most recent 5 crop years (*cannot be lower than the reference price* for any year).

- Under the *individual coverage*, the **benchmark revenue** shall be based on the producer's share of all covered commodities planted on all farms for which individual coverage has been selected and in which the producer has an interest, to be determined as follows:
 - (a) For each covered commodity for each of the most recent 5 crop years, the *product* obtained by multiplying:
 - (i) the *yield per planted acre* for the covered commodity on such farms (*cannot be lower than 70% of transitional yield* for any year) by
 - (ii) the *national average market price* received by producers during the 12-month marketing year for the most recent 5 crop years (*cannot be lower than the reference price* for any year);

 - (b) For each covered commodity, the *Olympic average of the revenues* determined under (a) above for the most recent 5 crop years;

(c) For each of the 2014 through 2018 crop years, *the sum of the amounts* determined under (b) above for all covered commodities on such farms, but *adjusted* to reflect the *ratio* between the total number of acres planted on such farms to *a covered commodity* and the total acres of *all covered commodities* planted on such farms.

- The **ARC payment rate** for a covered commodity, in the case of **county coverage**, or a **farm**, in the case of **individual coverage**, shall be equal to *the lesser of* (1) the amount that:
 - (i) *the agriculture risk coverage guarantee* for the crop year applicable *exceeds* (ii) *the actual crop revenue* for the crop year applicable); or (2) *10 percent of the benchmark revenue* for the crop year applicable.
- The **ARC payment amount** for the crop year shall be *product of*:
 - (1) The payment rate; and
 - (2) The payment acres:
 - (i) In the case of *individual coverage*, the sum of: *65 percent of the base acres* of all covered commodities; or
 - (ii) In the case of *county coverage*: *85 percent of the base acres* of the covered commodity.

Source: Wailes, Chavez, Watkins and Coats (2014).

What kind of support can the U.S. rice sector expect over the next five years? The Congressional Budget Office is charged with making cost estimates of government programs and has done so first when the Agricultural Act of 2014 was adopted. It subsequently estimated expected baseline commodity program costs based on an annual basis using a model to project prices, production and government budget exposure. CBO estimated that mandatory spending for the period 2014 - 2018 under the 2014 farm bill originally would cost US\$ 23.556 billion.² With the decline in crop commodity prices, CBO has revised estimated Price Support and Related Programs to be US\$26.540 billion for the 2014- 2018 period.³

² CBO Estimated Budgetary Effects of the Agricultural Act of 2014, Jan 28, 2014, Table 3

³ CBO's January 2015 Baseline for Farm Programs. January 26, 2015.

Summary and Conclusions

The global rice economy is projected to expand more slowly as per capita consumption begins to decline. This results in a projected baseline of a slight rise in world reference export prices. The structure of global rice trade becomes more diversified with expansion of exports from Myanmar and Cambodia. Rapid population and income growth in Africa is expected to create expansion in rice imports into many countries on that continent, despite strong performance from national rice development programs. The Agricultural Act of 2014 is the latest U.S. farm bill. It substantially changes the commodity programs in favor of market responsive price and revenue support mechanisms in place of previous fixed direct payments. This is expected to have a positive effect on US rice exports. Costs of these programs are more uncertain. Recent projections of weaker crop prices has resulted in an increase in the expected costs of the new farm program.

Annex Tables

Annex Table 1. Total World Rice Exports (Thousand Metric Tons)

Country	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Thailand	10300	10708	11158	11335	11559	11815	12095	12374	12623	12894	13195	13579
India	10300	8582	7185	7038	7122	7244	7246	7314	7544	7694	8045	8064
Vietnam	6500	6578	7082	6971	7035	7095	7254	7261	7385	7587	7694	7776
Pakistan	3900	3973	4001	4013	4035	4028	4067	4085	4098	4127	4132	4151
United States	2985	3284	3334	3584	3639	3622	3621	3635	3636	3659	3678	3720
Myanmar	1550	1549	1478	1552	1580	1719	1973	2211	2434	2550	2655	2712
Cambodia	1000	1183	1273	1367	1570	1771	1895	2008	2119	2240	2365	2422
Uruguay	890	967	1000	1032	1051	1071	1089	1106	1122	1136	1150	1147
Brazil	900	898	879	892	890	887	890	889	889	889	889	889
Egypt	600	501	504	673	669	695	715	735	751	759	763	766
Argentina	600	595	629	652	641	670	656	658	677	685	693	707
China	257	417	487	589	648	676	679	709	735	741	770	781
Australia	460	402	417	431	440	452	477	502	515	528	535	538
ROW	1984	2068	2075	2078	2081	2084	2089	2105	2111	2092	2075	2124
Total Exports	42226	41705	41502	42205	42960	43830	44746	45594	46639	47582	48638	49377

Source: Arkansas Global Rice Model, January 2015.

Annex Table 2. Total World Rice Imports (Thousand Metric Tons)

Country	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
China	4015	3998	3781	3773	3686	3701	3718	3731	3743	3756	3767	3782
Nigeria	2800	3302	3254	3280	3381	3484	3673	3889	4086	4299	4550	4830
Iran	1650	1603	1605	1714	1782	1870	1899	1957	2006	2046	2104	2138
Iraq	1350	1396	1412	1445	1491	1553	1598	1644	1697	1747	1796	1842
EU 28	1530	1513	1503	1512	1535	1551	1572	1590	1608	1625	1642	1658
Saudi Arabia	1450	1404	1457	1485	1518	1551	1585	1616	1645	1673	1701	1726
Philippines	1450	1469	1270	1246	1364	1471	1483	1570	1649	1752	1860	1981
Indonesia	1225	1368	1705	1910	1682	1599	1412	1270	1311	1376	1359	1315
Cote d'Ivoire	1150	1159	1186	1199	1199	1230	1245	1260	1273	1285	1300	1298
Senegal	1100	1140	1115	1131	1153	1185	1216	1249	1281	1316	1345	1379
Malaysia	1100	1098	1049	1061	1092	1099	1135	1138	1157	1170	1196	1210
South Africa	975	1033	1034	1050	1069	1089	1114	1135	1159	1170	1178	1190
Mexico	693	779	757	771	790	810	829	850	878	886	887	908
United States	733	712	771	766	781	778	795	803	814	827	852	881
Ghana	600	638	693	731	740	764	784	802	814	840	844	870
Japan	654	682	682	682	682	682	682	682	682	682	682	682
Mozambique	500	532	541	563	585	618	643	670	700	729	759	781
Bangladesh	751	615	872	846	986	1012	819	620	378	223	128	84
Cameroon	525	508	509	523	544	542	560	586	587	598	592	586
Kenya	430	387	419	427	440	447	474	502	522	553	583	605
ROW	17545	16368	15885	16092	16460	16794	17509	18030	18647	19031	19513	19631
Total Imports	42226	41705	41502	42205	42960	43830	44746	45594	46639	47582	48638	49377

Source: Arkansas Global Rice Model, January 2015.