Project Report on

Impact of Labor Policy Changes on Louisiana Seafood Production

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Abstract: This technical report presents main elements of the work completed during the period Feb. 2018-Jan. 2019

Introduction:

Crawfish and alligator producers in Louisiana depend on a significant number of farm workers in the growing and harvesting phase as it is labor intensive work (Wu et al., 2016). A lower supply of domestic workers and strict enforcement of U.S. immigration laws lead Louisiana crawfish and alligator producers to recruit an increasing number of foreign guest workers hired through the H-2A program. In the United States, the H-2A Temporary Agricultural Worker program is authorized by the Immigration and Nationality Act (INA) as amended by the Immigration Reform and Control Act (IRCA) of 1986 for importing foreign seasonal workers temporarily by agricultural employers to work for an agricultural firm if they are facing a shortage of U.S. workers similarly situated (French, 1999). Several proposals have been introduced in the U.S. Congress to address the immigration problems and those proposals include strict domestic enforcement, deportation of illegal immigrants and simplifying the H-2A guest worker program (Fan et al., 2015).

The H-2A program originated in 1943 by the U.S. government after giving permission to The United States Sugar Corporation for employing Caribbean workers on temporary visas to hand-cut Florida sugar cane. This program became the H-2 program after it was included as a subsection in the Immigration and Nationality Act of 1952 (Goldstein, 1997). Historically, the H-2 program was taken as a fraction of the Bracero Program (series of agreements between United

States and Mexico for importing manual labor from Mexico to the United States) and focused on the sugar cane and east coast apple production (Wilkinson, 1989). Later on, the H-2 program was separated into agricultural and nonagricultural temporary foreign worker provision H-2A and H-2B programs by the Immigration Reform and Control Act (IRCA) of 1986 amending the Immigration and Nationality Act. After the 1986 amendments, employment of H-2A workers expanded to hundreds of tobacco firms in Virginia, cucumber fields in North Carolina, Kentucky, Tennessee, and Connecticut, as well as in other states in a variety of agricultural firms (Goldstein, 1997).

The H-2A program is very effective for some farm owners for securing seasonal low skilled workers for their farm operations. This program connects farm owners and non-immigrant guest farm workers directly and is considered an important immigration policy to alleviate seasonal labor shortages (Badruddozza et al., 2016). As availability of seasonal domestic labor decreased, many seafood producers and crop producers used the H-2A program, with numbers of H-2A labors increasing by 50% between 2010 to 2014 in the United States (Bronars, 2015). In the southern United States, the diversity of non-immigrant seasonal agricultural and construction labor based on the foreign countries has been increasing (O'Sullivan, 2000). The majority of the H-2A labors are young men from Mexico (over 90%) and others are from South Africa, Peru, Guatemala, Romania, Nicaragua, New Zealand, Costa Rica, El Salvador and Uruguay (Bronars, 2015).

There is no annual numerical limit on the number of H-2A visas, but farm employers must obtain the certification from the U.S. Department of Labor (DOL) of their need for guest workers through satisfying three major criteria. First, farmers must satisfy DOL that there are not sufficient able, willing, and qualified U.S. workers available to perform the temporary and

seasonal agricultural employment for which nonimmigrant foreign workers are being requested. Second, farmers must provide for H-2A workers: a free housing, three meals per day or furnish free and convenient cooking and kitchen facilities where workers can prepare their own meals, proper transportation facility from workers' living quarter to worksite at no cost, and inbound and outbound transportation expenses from workers' home country to U.S.. Third, farmers must pay H-2A workers at least the highest of the following applicable wage rates in effect at the time work is performed: the adverse effect wage rate (AEWR), the applicable prevailing wage, the agreed-upon bargaining rate, or the federal or state minimum wage. The wage rate offered is reviewed by the US Department of Labor (DOL) based on regulation 20 CFR 655.120 (I) stating that employer must pay their H-2A workers at least the highest of the Adverse Effect Wage Rate (AEWR) or the Federal or State minimum wage, in effect at the time the work is performed. According to the US DOL, in Louisiana, the 2018 AEWRs is fixed to $10.73/hr. From the data which are available from Office of Foreign Labor Certification, we found that the average basic pay for H-2A labors in Louisiana was $10.66/hr in the year of 2017. Most of the producers in Louisiana are paying up to 40% higher than the minimum wage to H-2A labor (Greater Baton Rouge Business Report, 2015). That implies that there are fluctuations in the wage rate offered based on the tasks performed by the guest workers and the locality the operation is established. Then producers have to pay a broker to facilitate the transaction. In addition, they have to pay to transport the workers from their home countries to the US and have to cover the costs of all their housing, meals and transportation from/to housing facilities and workplace.

When bringing foreign nationals under the H-2A program to fill agricultural jobs in the United States, agricultural producers are required to submit a temporary labor certification application to the U.S. Department of Labor (DOL). After receiving temporary labor certification

for H-2A employment from DOL, the producer should file I-129 form with USCIS. After the approval of I-129 form, prospective H-2A labor who is outside the U.S. can apply for H-2A visa. Based on data from the U.S. Office of Foreign Labor Certification (OFLC)'s 2016 annual report, there were 165,741 H-2A positions certified during the 2016 fiscal year. The number of positions requested for H-2A job visas was increased by 18 percent, but there was a 17 percent decrease in the number of certified H-2A temporary employment applications in fiscal year 2016 over fiscal year 2015. In 2016, more than 2000 positions for H-2A labors were certified for work in 20 states each. Of these states, Florida, North Carolina. Georgia, Washington, California, Louisiana, Kentucky, New York, and Arizona had the greatest demand with over 5,000 positions were certified for each states. In Louisiana, 8,301 H-2A positions were certified in that fiscal year; Baton Rouge (627 positions), Lafayette (588 positions) and New Orleans (556) are the three major cities H-2A workers were employed. Sugarcane, crawfish, sweet potatoes, nursery and green house, and rice farms were the top 5 farm types in Louisiana using H-2A labor (OFLC Annual report, 2016).

The H-2A program in its current format has been in existence since 1986. Nevertheless, many U.S. farmers are still unfamiliar with the program and those who are familiar debate over its functionality and efficiency. Higher cost required to hire H-2A workers, the unpredictability in terms of availability of those workers exactly during the peak period of crop season, and administrative burden are some drawbacks of the H-2A program (Wicker 2012). In addition, the bureaucratic burden of advertising, hiring, keeping records, training, and replacing U.S. workers who show limited and short-lived interest in the position are other concerns that growers are facing (Martin et al., 2013).

According to USDA, the Departments of State, Agriculture, Labor, and Homeland Security are working together to modernize the H-2A visa program by clarifying and improving the regulations governing the program (USDA Newsletter, May 2018). Among different strategies for efforts to prolong current farm workers' participation in the agricultural labor market, better management planning and workplace supervision are more important.

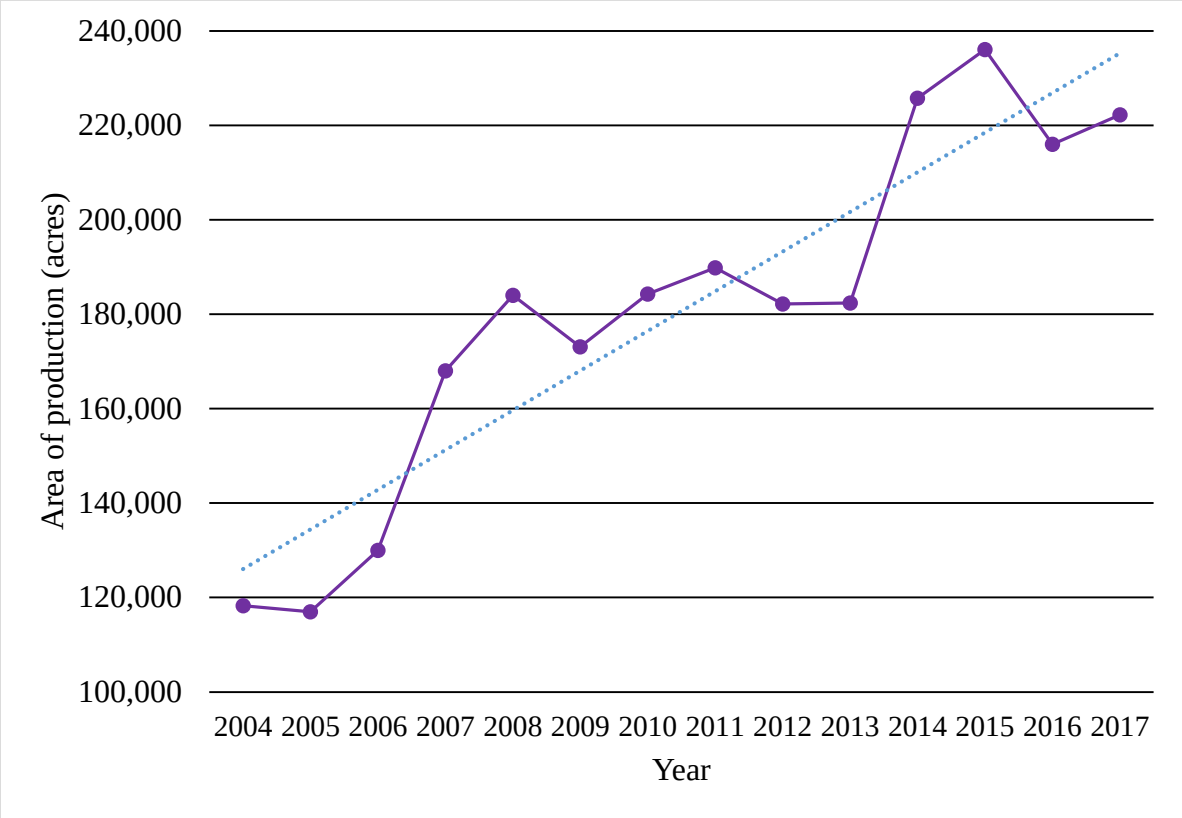
Crawfish and alligator production in Louisiana

Crawfish has been an important part of Louisiana culture since back to Native Americans and early European settlers. It was a favorite food for them because of abundant swamps and marshes across south Louisiana for crawfish growth and cultivation (LA Crawfish Promotion and Research Bd., 2017). Louisiana is ranked first in the United States as a provider of shrimp, oyster, crabs, crawfish, and alligator (Porthouse et al., 2010). According to the Louisiana Seafood Promotion and Marketing board, one out of every 70 jobs in Louisiana is created by the Louisiana seafood industries, with an economic impact of $2.4 billion annually for the state. In addition, there is a market opportunity for Louisiana crawfish and alligator producers within the state because Louisiana has one of the highest concentrations (5.3%) of seafood processors after Alaska (18.7%) and Massachusetts (6.3%) within the United States (Newsome, 2014).

The production of crawfish is increasing in Louisiana. An increasing demand for crawfish both within the state and within region has incentivized expansion of acreage and production over the last several years in Louisiana. In addition, an increase in crawfish production is observed as rice producers who are looking to offset struggling rice markets have added crawfish production to their farming operations. In 2014, farm-raised crawfish production totaled 225,789 acres, which was up 40,000 acres from the previous year. It reached 236,095 acres of land with gross farm value of $189 million in 2015. In 2016, even if total area of

production decreases to 216,000 acres which is lower than previous years, producers were estimated to produce 135 million pounds of crawfish, which was up by 2 percent over 2015 and generated gross farm value of $196 million. In 2017 farm raised crawfish production occupied 222,259 acres, 3 percent up from the previous year. Even if total acres were up in 2017, total production was down by 6 percent from previous year due to growing issue including some disease infestation on the field. Total gross farm value reached $172.1 million, which is 12% down from previous years because of lower production and slightly lower price in 2017 (Louisiana summary 2014-2017).

Figure 1: Louisiana Crawfish Production Acreage, 2004-2017



Source: Louisiana Summary: Agriculture and Natural Resources, multiple issues

Around 313,000 wild and farmed alligators are harvested per annum having an economic impact of $120 million. Farm-raised alligators was the second largest segment of aquaculture industry in 2016 in Louisiana. Production of farm-raised alligators was up by 7 percent in 2016 over 2015 with a gross farm value up by nearly 3 percent. In 2017, production of farm –raised alligators was up by 50 percent which is about 2.02 million feet and estimated gross farm value of $83.6 million (Louisiana Summary, 2015-2017).

The issue of temporary H-2A labor is gaining considerable attention in Louisiana and around the country. Since 2011 due to a series of policy changes at the federal level, the Louisiana seafood industry has been under constant pressure to change production and processing of seafood or exit the business. The use of H-2A labor in Louisiana seafood/aquaculture production has increased steadily over several decades. This has been in response to a reduced supply of unskilled domestic labor and the willingness of H-2A labor, mostly from Mexico, to fill these jobs. Recently, however, the supply of H-2A labor in the U.S. and Louisiana in particular has been limiting for two reasons. First, the number of work permits granted by the federal government has not met the demand for this labor. Second, the economy in Mexico has improved in recent years such that Mexican citizens have had less to gain by seeking employment in the U.S. unskilled labor market. Another prominent issue with H-2A labor is that the U.S. Department of Labor and local seafood processors frequently disagree on the wage required for these workers, with Department wages higher than those claimed by local producers to be the prevailing wage. Shortages of H-2A labor and potentially higher required wage rates for this labor in Louisiana hold potentially serious consequences for the state’s seafood industry.

Objectives:

1. To determine the extent of uses of H-2A labor in seafood (crawfish and alligator) production in Louisiana

   (Methods: survey instruments-direct information from respondents, Administrative data-Office of Foreign Labor Certification, DOL).
2. To determine the consequences incurred by Louisiana crawfish and alligator production firms under the scenarios of Labor shortage and wage increases

   (Impact of labor shortages and wage increases scenarios: Sensitivity of demand for H-2A labor due to wage fluctuations through demand elasticity)
3. To know the reasons why crawfish and alligator producers hire nonimmigrant labors

   (Through local labor statistics, labor related skills and attributes, perception)
4. To determine the value of H-2A labor to crawfish and alligator producers

   (Choice based conjoint analysis)
5. To determine the full costs incurred by firms in using H-2A labor in crawfish and alligator production in Louisiana

   (From properly defined costs associated with H-2A guest workers programs including transaction costs)

For our project we worked on examining the economic efficiency of rice-crawfish farms employing the same H-2A workers both for crawfish and rice farms. To gather data from survey questionnaires related to the total production, different inputs used for production process, cost of production and demographic information of producers are developed (Apendix1). For addressing our remaining objectives we have developed additional questions (Apendix2).

Methodology:

A survey instrument was developed from series of discussion and meetings weekly and biweekly. The survey instrument was IRB exempted and a mail and online survey (through LSU Qualtrics) was administered. A list of rice and crawfish producers was compiled from the AgCenter newsletter and the Office of Foreign Labor Certification (OFCL) database. We followed the Dillman Tailored Design Method (Dillman, Smyth, & Melani, 2011). Producers were first contacted through first class mail including questionnaire, signed and personally addressed letter on official LSU Agricultural Center letterhead and business reply envelope in the initial phase. The second contact was a postcard reminder one and half weeks later to remind those producers who had not sent back the questionnaire yet and to thank those who had already returned the questionnaire. After the postcard reminder, approximately one and a half week later, a third contact was made using first class mail that included the second questionnaire which replaced the first in case it was lost. The fourth and final contact was the second postcard reminder which was sent one and half weeks after the third contact. The Dillman Tailored Design Method was applied as the project PIs deemed that to be the best approach to reach rice and crawfish producers. We were expecting approximately a 15% to 20% response rate for this survey because in a previous survey for the study of crawfish production and marketing of Louisiana crawfish industry, the questionnaire yielded less than 20% response rate from the crawfish farmers (Nyaupane et al., 2010). The completed sample size needed for desired level of precision was calculated by following formula:

$$N_s = \frac{(N_p)(P)(1-P)}{(N_p - 1)\left(\frac{B}{C}\right)^2 (P)(1-p)}$$

Where, N_s= completed sample needed for desired level of precision

N_p= size of population

P = proportion of population expected to choose one of the two response categories.

B = acceptable sampling error

C = Z statistic associated with the confidence level; 1.96 corresponds to the 95% confidence level.

However, the response rate was too low. Around 23 producers provided us the information about H-2A workers and their farm production. Self-reported data from survey would allow for a thorough examination of use and extend of H-2A workers and the creation of the crawfish and alligator industry profile in the state of Louisiana. However, our survey had very low response rate so we could not figure out the wage rate and number of H-2A workers changed over the period of time. Hence, we could not calculate the sensitivity of demand for H-2A labor due to wage fluctuations through demand elasticity. A revised questionnaire is under development and will be sent out.

Below we present summary statistics result from our survey with rice-crawfish farmers. Even if the number of observations is small due to lower response rate, it provides a picture of use of H-2A workers in Louisiana crawfish and rice farms.

Table 1. Summary statistics of our survey

Variable	Obs	Mean	Std. Dev.	Min	Max
1 if Farmer adopted Fallow in 2017 and grow crawfish in 2018 or 0 otherwise	13	0.23	0.43	0	1
1 if Farmer grow crawfish in 2016 and has fallow in 2017 and planted rice in 2018 or 0 otherwise	13	0.30	0.48	0	1
Number of years farmer involved for crawfish production	10	17.8	12.27	3	40
Crawfish harvested acres	9	578.11	297.93	168	1000
Crawfish Yield per acre (lb/acre)	9	616.66	172.77	400	900
Number of H-2A workers working for rice only	2	2.5	0.70	2	3
Number of H-2A workers working for crawfish only	6	6.16	6.61	0	18

Number of H-2A workers working for rice and crawfish	6	4.16	3.311	1	10
Number of H-2A workers returned to farm in 2017 from 2016	8	6.875	5.46	1	18
Average wage per hour of H-2A workers ($/hr)	8	10.73	0.11	10.6	11
Cost of advertisement per H-2A workers ($)	5	430	189.07	250	700
Cost of visa processing and visa related works per H-2A workers ($)	7	3728.57	2068.58	1200	7000
Cost of transportation per H-2A worker ($)	5	4200	3510.69	1000	10000
Cost of housing per H-2A worker ($)	6	4583.33	3813.35	1500	12000

Source: data computed from our survey

According to our survey, 23% Louisiana crawfish farmers adopted fallow in 2017 and grow crawfish in 2018 and 30% Louisiana crawfish farmers grow crawfish in 2016 and have fallow in 2017 and planted rice in 2018. Crawfish farming is a common rotation crop for Louisiana rice producers and we found that on average, our respondents farm for 17.8 years. On average the farmers harvested crawfish from 578.11 acres of the land area with an average crawfish yield of 616.66 lb/acre. The average number of H-2A workers working on for rice only, crawfish only and rice and crawfish are 2.5, 6.16 and, 4.16 respectively. On average, around 7 H-2A workers returned to the farm in 2017 from 2016. Based on our survey data, in 2017 the average wage rate of H-2A workers in Louisiana rice and crawfish farms was $10.73 per hour which is little bit higher than the average wage rate calculated from OFLC FY2017 data. Similarly, the average cost of advertisement, visa processing, transportation and, housing are $430, $3728.57, $4200, and $4583.33 per H-2A workers, respectively.

OFLC Data

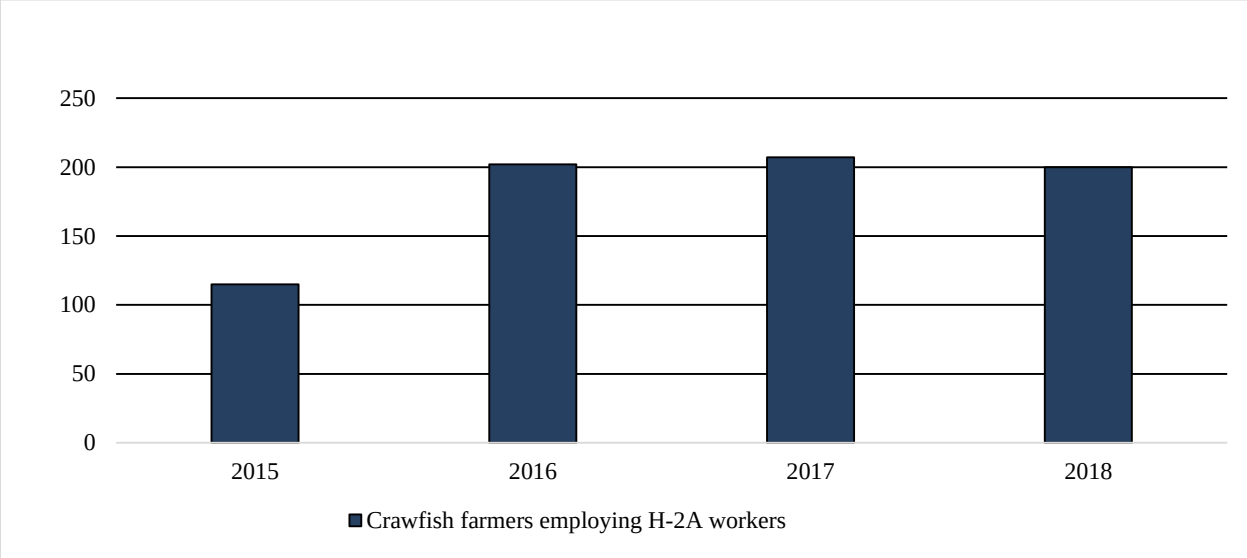
Due to the low response we could not get full information or production process such as cost of production data. Hence we were unable to use those data for our economic analysis. We proceeded by secondary data from the OFLC. Below we state main findings. Two manuscripts

were completed using information from the OFLC; please refer to the publications tab in the final report.

Extent of uses of H-2A labor in crawfish production in Louisiana

Crawfish producers rely predominately on H-2A labor. The number of Louisiana crawfish farmers employ through the H-2A program has increased between 2015 and 2018 (Figure 2).

Figure 2: Number of Louisiana crawfish farmers employing H-2A workers, 2015-2018

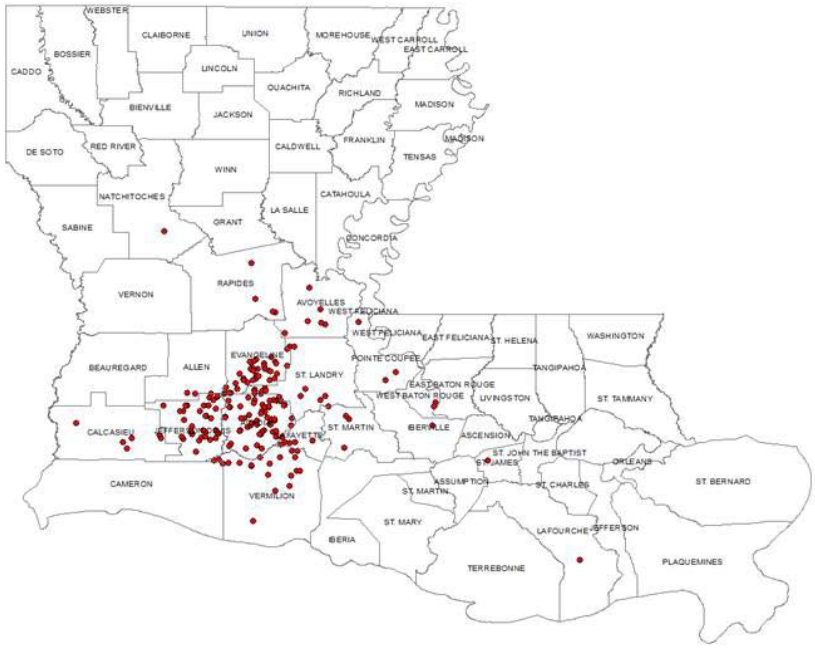


Notes: Data computed from OFLC (2018). Figure reports on the number of farmers employing through the H-2A program. Data filtered by primary crop, multiple entries per farmer are accounted.

Mostly in Louisiana crawfish is produced with rice as a rotational crop or as a multiple crop. Based on the same data of OFLC from 2015 to 2018, we found that in Louisiana numbers of rice-crawfish farmers (around 17) employing H-2A workers are more in Crowley, a city of Acadia Parish. Similarly, Ville Platte (15), Eunice (14), Rayne (14), Mamou (13) are some city where rice-crawfish farmers using H-2A workers are concentrated more. The numbers in the bracket indicate rice-crawfish farmers using H-2A workers. It is found that during 2015 to 2018 most of the rice-crawfish farmers employing H-2A workers are concentrated in the south-west

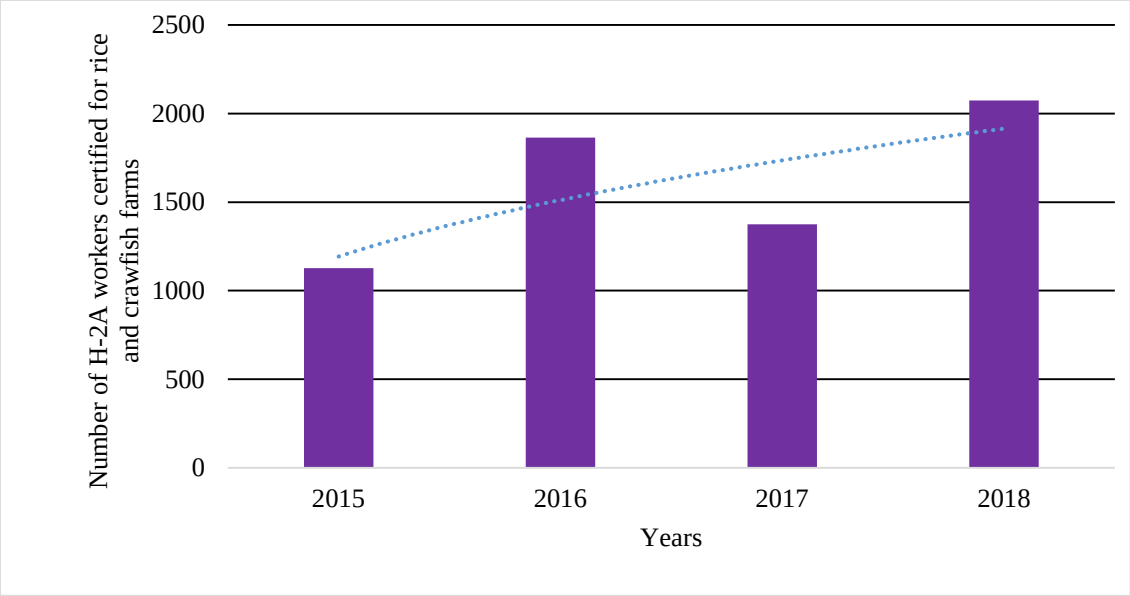
region of Louisiana. In figure 3, red dots represent the locations of rice-crawfish farmers in Louisiana.

Figure 3. Concentration of Louisiana rice-crawfish farmers employing H-2A workers (From 2015-2018)



In addition, the number of H-2A workers certified to work on rice and crawfish farms in Louisiana has increased in the same period as shown in Figure 4.

Figure 4: Number of H-2A workers certified for working in rice and crawfish farms in Louisiana during the period 2015-2018.



Source: Data computed from OFLC (2018)

Table 2. Summary statistics of Louisiana crawfish farms

Variable	Obs	Mean	Std. Dev.	Min	Max
Number of H-2A workers requested	236	5.66	6.54	1	40
Number of H-2A workers certified	236	5.64	6.55	0	40
Working hours per week for H-2A workers	236	37.52	2.54	35	45
Basic wage rate ($/hr) for H-2A workers	236	10.64	0.11	10.38	10.69
Total staying period of H-2A in the farm	236	6.02	1.15	3.2	13.03

Source: Data computed from OFLC (2017)

According to the OFLC data FY 2017 we found that 236 Louisiana farmers state crawfish as their primary crop, based on which the application for H-2A workers is filed. The average number of H-2A workers requested by those farmers is 5.66 and the average number of H-2A workers certified for their farms is 5.64. Similarly, the average number of working hours per week for those workers is 37.52 and average pay for them is $10.64 per hour.

Value of H-2A labor to crawfish and alligator producers

A revised questionnaire was developed to address this objective. Please see appendix 2.

Economic Impact analysis of Louisiana crawfish farms

Economic impact analysis focus on the contribution to the economy that are made by the presence of an industry or a portion of the industry. The contribution of H-2A workers is significant in crawfish industries of Louisiana and also to the economy of the state. They add significant amount of money in housing and transportation spending, agency spending, direct spending of their wages. The economic impact of crawfish industries in the Louisiana were determined through the economic impact assessment through IMPLAN. IMPLAN is a regional economic model that is widely used for conducting economic impact analyses. In this analysis we used expenditure data we got it from our survey. We created bridge table and activity table through the data of AgCenter crop budget data and our survey result to run it on the IMPLAN software.

Table 3. Total Economic impact of Louisiana crawfish farms

Impact Type	Employment	Labor Income ($ millions)	Total Value Added ($ millions)	Output ($ millions)
Direct	2,222	33.94	54.95	79.34
Indirect	0.00	7.49	13.29	24.25
Induced	0.00	21.11	35.59	58.51
Total	2,222	62.54	103.83	162.1

*****Value added= employee compensation, proprietor income, other property income and indirect business taxes

Table 3 represents the direct, indirect, induced and total economic impacts of crawfish farms in Louisiana. It includes impacts associated with the expenditures on crawfish farms in Louisiana. The total economic impact of crawfish farms in the Louisiana is approximately 2,222 in employment, $62.54 million in labor income, $103.83 million in total value added, and $162.1 million in economic output.

References:

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French, A. (1999). Guestworkers in agriculture: The H-2A temporary agricultural worker program. *Labor Management Decisions, 8*(1), 3-7.

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Wilkinson, A. (1989). *Big sugar: Seasons in the cane fields of Florida*: Knopf.

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Meetings and activities:

1. Visited alligator processing site and alligator and crawfish producers before developing questionnaires
2. Attended Quarterly Sea Grant Meeting, LSU Campus- Louisiana Sea Grant Conference Room, December 15-16, 2016 and discuss with Sea Grant Agents about our project.

3. Attended 181st quarterly meeting of the Marine Extension Program of the Louisiana Sea Grant in LSU Hilltop Arboretum- April 4, Tuesday, 2017 and discuss with different marine extension agents to make our survey more effective.

Appendix1:

Rice Rotation Structure, Labor Usage and Economics Survey
Department of Agricultural Economics and Agribusiness

Purpose: The purpose of this survey is to understand the economics of rotation crops used with rice including how producers strategically use hired farm labor for managing rotations. The results of this survey will provide meaningful information to not only rice producers but organizations that help support rotation commodities as well as provide decision support evidence around policies related to access of hired farm labor.

Completing the Survey and Consent: Please find the survey below. The survey is being sent out to rice producers that participate in various crop rotations as well as crawfish. Please complete the survey and attach it in the self-addressed envelope provided. Alternatively, you can go to the following website to complete the survey http://lsuagcenter.com/2018ricesurvey1. By mailing back the survey or submitting the online form, you consent to your participation in the research study. Completion of the survey is entirely voluntary.

Confidentiality of Data: All data collected in this survey is strictly confidential and will only be tabulated and used in this study within the Department of Agricultural Economics and Agribusiness, LSU AgCenter, Baton Rouge, LA. Your identity will remain confidential unless legally compelled. Reported data will include only aggregated summary statistics that do not directly or indirectly disclose the information of any farm operation or individuals within that operation.

This survey has been approved by the LSU AgCenter Institutional Review Board Approval #HE18-19.

Any questions concerning the survey can be sent to J. Matthew Fannin at mfannin@agcenter.lsu.edu, (225) 578-0346, Mon-Fri 8:00am – 4:30pm.

Section 1: Farm Production and Non-Labor Costs

1. Based on land planted in **Rice in 2016**, what rotations did you use for **that same land** in 2017 and 2018? (*Check All that Apply*)

☐ Fallow (2017)-Rice (2018) ☐ Fallow (2017)-Crawfish (2018)
☐ Fallow (2017)-Soybeans (2018) ☐ Crawfish (2016)-Fallow (2017)-Rice (2018)
☐ Soybeans (2017)-Fallow (2018) ☐ Other_____ (2017) - _____ (2018)

2. How many acres of **rice** did you plant and harvest in 2016 and 2017 and what was the average yield across those harvested acres? *(If you did not grow rice in 2017, leave that year blank).*

	2016			2017		
	Planted Acres	Harvested Acres	Yield per Acre	Planted Acres	Harvest Acres	Yield per Acre
Rice (cwt)						
Rice planted for crawfish production only						
Planted Rice Variety Percentage	Clear field _____%			Clear field _____%		
	Other _____ %			Other _____ %		
Percent Ratoon Crop	_____ %			_____ %		

3. What was your average level and cost of selected inputs for **rice** production? *(If you did not grow rice in 2017, leave that year blank). (Per acre costs should be in planted acres.)*

Inputs Select (Total or Per Acre)	2016		2017	
	Amount:*Total__ or Per Acre__*	Cost: *Total___ or Per Acre___*	Amount:*Total__ or Per Acre__*	Cost: *Total___ or Per Acre___*
Fertilizers (N, P, & K) in lbs		$		$
Seed in lbs		$		$
Herbicides in oz or pt		$		$
Fungicides in oz or pt		$		$
Insecticides in oz or pt		$		$
Diesel Fuel in gals		$		$
Labor costs in hrs		$		$
Irrigation Costs Supplies		$		$
Energy in gals		$		$
Repair and maintenance	N/A	$	N/A	$
Fixed expenses (implements, tractors, self-	N/A	$	N/A	$

propelled, irrigation system, etc.)				

4. How many acres of **soybeans** did you plant and harvest in 2016 and 2017 and what was the average yield across those harvested acres?

	2016			2017		
	Planted Acres	Harvested Acres	Yield per Acre	Planted Acres	Harvest Acres	Yield per Acre
Soybeans (bu)						

5. What was your average level/cost of selected inputs for **soybean** production? *(If you did not grow soybeans in 2016 or 2017, leave that year blank). (Per acre costs should be in planted acres.)*

Inputs Select (Total or Per Acre)	2016		2017	
	Amount*:Total__ or Per Acre__*	Cost: *Total___ or Per Acre___*	Amount*:Total__ or Per Acre__*	Cost: *Total___ or Per Acre___*
Fertilizers (N, P, & K) in lbs		$		$
Seed in lbs		$		$
Herbicides in oz or pt		$		$
Fungicides in oz or pt		$		$
Insecticides in oz or pt		$		$
Diesel Fuel in gals		$		$
Labor costs in hrs		$		$
Irrigation Costs				
Supplies		$		$
Energy in gals		$		$
Repair and maintenance	N/A	$	N/A	$
Fixed expenses (implements, tractors, self-propelled, irrigation system, etc.)	N/A	$	N/A	$

6. How many years have you been involved in crawfish production? _____Years

7. How many acres of **crawfish** did you harvest in 2016 and 2017 and what was the average yield across those harvested acres?

	2016		2017	
	Harvested* Acres	Yield per Acre	Harvested Acres	Yield per Acre
Crawfish (lbs)				

* Harvested acres for crawfish in 2016 based on 2015 planting/production; crawfish in 2017 based on 2016 planting/production.

8. What was your average level/cost of the selected inputs for **crawfish** production? *(If you did not grow crawfish in 2016 or 2017, leave that year blank). (Per acre costs should be in planted acres.)*

Inputs Select (Total or Per Acre)	2016		2017	
	Amount*:Total_ _ or Per Acre__*	Cost: *Total __ or Per Acre__*	Amount*:Total_ _ or Per Acre__*	Cost: *Total__ or Per Acre__*
Fertilizers (urea) in lbs		$		$
Herbicides in oz or pt		$		$
Insecticides in oz or pt		$		$
Forage planted in acres		$		$
Rice seed in lbs		$		$
Crawfish bait in lbs		$		$
Diesel Fuel in gals		$		$
Labor costs in hrs		$		$
Irrigation Costs		$		$
Fixed expenses (implements, tractors, self-propelled, irrigation system, etc.)	N/A	$	N/A	$

9. What percent of your crawfish revenue in 2017 was marketed as
Consumer Direct-Live_____% Consumer Direct-Processed_____%
Wholesaler _____ % Processors_____%

10. Approximately what percentage of your total household income came from the crawfish farming operation in the following years?
2016-☐ <10% ☐ 10-25% ☐ 26-50% ☐ >50%
2017-☐ <10% ☐ 10-25% ☐ 26-50% ☐ >50%

Section 2: Labor Usage (Used in Rice, Soybean, and/or Crawfish Production)

11. Please provide number of production workers, work time, and average wage rate by production worker category for 2016 and 2017. *(Do not include paid workers that have primarily management/supervisory responsibilities)*

		# Production Workers	Avg. Hours/Week	Weeks per Year	Avg. Wage/Hour
2016	H-2A				
	Non H-2A				
2017	H-2A				
	Non H-2A				

12. Please identify the number of H-2A workers that worked on the following commodity combinations in 2016 and 2017. *(Total for each year should sum to the number of H-2A workers*

in Question 11.)

2016: Rice only____ Crawfish only____ Rice/Crawfish____ Rice/Crawfish/Soybeans____

2017: Rice only____ Crawfish only____ Rice/Crawfish____ Rice/Crawfish/Soybeans____

13. **Based on your answer to the previous question, how many of the total H-2A workers that worked for you in a given year also worked for you in the previous year?** *(For example, if 10 of the 100 H-2A workers you employed in 2016 also worked for you in 2015, report 10 under "number from 2015")*

2016: Number from 2015____ 2017: Number from 2016____

14. Please provide number of hired supervisors, supervising time and average wage rate supervising production workers.

	# of Hired Supervisors/ Managers	Avg. Hours/Week Supervising	Avg. Hours/ Week Other Activities	Total Weeks per Year	Avg. Wage/Hour
2016					
2017					

15. Please provide number of non-paid owners/family members supervising production workers.

	# Non-paid Owners/ Managers	Avg. Hours/Week Supervising	Total Supervision Weeks per Year
2016			
2017			

16. How much do you spend in the following categories to attract hired farm labor in 2017?

Sections	H-2A worker	Non-H-2A Worker	Supervisor
Advertisements			
Visa processing/related paperwork			
Transportation to/from work			
Housing			
Other			

Section 3: Demographic Information/Crawfish History

17. Please identify your age.

☐ ≥18 and ≤ 30 ☐ 31-45 ☐ 46-60
☐ 61-75 ☐ ≥76

18. Do you hold an off-farm job?

☐ Yes ☐ No

19. What is your highest level of education?

☐ < HS Diploma ☐ HS Diploma ☐ Some College/Technical School

☐ Associates degree ☐ Bachelor's degree ☐ Advanced/Professional degree (M.S./Ph.D.)

20. Are you a member of a farm or commodity organization?

☐ Yes ☐ No

21. How many times have you attended an AgCenter event or used extension services in 2017? ☐ 0 ☐ 1-2 ☐ 3 or greater

Appendix 2: Remaining survey questions

Section 1: Labor shortages and Wages

1. Compared to 2016 through 2017, how difficult was it to find labor for your farm operation between 2016 and 2017?

not difficult ***very difficult***

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

2. Did you face labor shortages at any point between 2016 and 2017?

☐ Yes ☐ No

3. If yes, what do you think to be the primary cause of this shortage? Select the most relevant option.

☐ Could not offer prevailing wage ☐ Could not find qualified applicants

☐ Too few applicants overall ☐ High turnover rate (workers quit/terminated frequently)

4. If enough labor is available on your farm, by how much you expect you will have increased production?

☐ None ☐ 11-20% ☐ 31-40% ☐ more than 51% (*specify* _____%)

☐ 1-10% ☐ 21-30% ☐ 41-50%

5. If Congress passes an **H-2A** labor wage increase, how do you expect this will affect your operation overall? *(please check all that apply)*

☐ Not at all ☐ Increased product price

☐ Decreased production ☐ Ceased production

☐ Consider decreasing/ceasing production ☐ Increased production

☐ Other *(please specify)*: _____

6. If the **H-2A** wage increases, do you expect your hours of operation to

☐ Increase *(If yes, how much)* _____% ☐ Decrease *(If yes, how much)* _____%

☐ Remain unchanged

7. Based on the 2016-2017 time period, respond to each statement. Please mark X in the appropriate box.

Statements	Strongly Agree	Agree	Unsure	Disagree	Strongly Disagree
Labor problems contributed to reduced seafood production on my farm.					
Labor problems contributed to significant capital losses.					
Labor problems contributed to increased prices for some or all of my products					
Labor problems contributed to delayed or cancelled plans to expand my farm operations.					
Labor problems contributed to decreased efficiency of farm operations.					

8. Which of the following actions have you considered or already done in response to labor shortages? *(Write 0 for have not considered or applied; 1 for considered; 2 for applied)*

__ Pay higher wages
__ Move to another state or region
__ Cease operations
__ Other: _____
__ Move to another country
__ Reduce operations
__ None of these

Section 2: Hiring Preferences of workers

1. Which types of labor do you prefer to hire in your farm?

☐ US Citizens
☐ H-2 A Guest Workers
☐ Permanent Residents (green card holders)
☐ Indifferent in any workers

2. Please consider the years 2016-2017 and respond to each statement. Please mark 'X' in the appropriate box *(Please check all that apply).*

Statements	Strongly Agree	Agree	Unsure	Disagree	Strongly Disagree
H-2A workers are more reliable labor sources					
H-2A workers can work more in a day					
H-2A workers are easily available in the particular season					
H-2A workers are more responsible in their tasks					

3. If you are hiring non-H-2A workers in the years 2016-2017 please mark X in the appropriate box *(Please check all that apply).*

Statements	Strongly Agree	Agree	Unsure	Disagree	Strongly Disagree
Non H-2A workers are more reliable labor sources					
Non H-2A workers can work more in a day					
Non H-2A workers are easily available in the particular season					
Non H-2A workers are more responsible in their tasks					

Section 3: Value of Guest Workers

1. Please consider the following attributes of employees that you may hire for your seafood production

☐☐**Immigration status:** U.S. citizen, Immigrant (permanent resident with green card), H-2A Guest Worker.

☐☐**Performance:** excellent, medium, or poor.

☐☐**Wage:** high ($11.15/hour), medium ($10.66/hour), or low ($7.25/hour).

On the basis of **immigration status, performance,** and **wage**, please describe the *most favored* employee you could hire, worthy of a rating of **"10."**

_____

Now, using the same criteria, please describe the *least favored* employee you could hire, worthy of a rating of **"0."**

_____

Assume all other potential employees fall between "**0"** and "**10**.". Please examine the 11 alternative employees below, and rate them on a scale between 0 and 10, where *10 would be your most favored employee* and *0 would be your least favored employee* as described above.

Employee	**Description**	**Your Rating**
1	Native U.S. citizen with excellent performances, wage=$7.25/hr	
2	Native U.S. citizen with poor performances, wage=$10.66/hr	
3	Native U.S. citizen with medium performances, wage=$11.15/hr	
4	H-2A non- immigrant visa with medium performances, wage=$10.66/hr	
5	H-2A non- immigrant visa with excellent performances, wage=$11.15/hr	

6	H-2A non- immigrant visa with poor performances, wage=$7.25/hr	
7	Immigrant with no H-2A visa with poor performances, wage=$11.15/hr	
8	Immigrant with no H-2A visa with medium performances, wage=$7.25/hr	
9	Immigrant with no H-2A visa with excellent performances, wage=$10.66/hr	
10	Native U.S. citizen with medium performances, wage=$7.25/hour	
11	H-2A non- immigrant visa with excellent performances, wage=$10.66/hour	

Additional questions:

1. Do you have your crawfish farms in more than one site?
☐ Yes ☐ No

2. If yes do you employ same H-2A workers in more than one site?
☐ Yes ☐ No

3. Do you want H-2A workers with some field experience?
☐ Yes ☐ No

4. Are H-2A workers are supervised (either by supervisor or by yourself)?
☐ Yes ☐ No

5. If you are hiring supervisors along with H-2A workers in the years 2016-2017 please mark X in the appropriate box. (To capture the social connection between workers and supervisors)

Statements	Strongly Agree	Agree	Unsure	Disagree	Strongly Disagree
Productivity of H-2A workers increases if the workers and supervisors are from same country					
Productivity of H-2A workers increases if the workers and supervisors came in the firm in the same time					

Productivity of H-2A workers increases if the workers and supervisors are living in the same housing					
Productivity of H-2A workers increases if the workers and supervisors are speaking same language					

6. Are you giving some incentives (bonuses) to supervisors?
☐ Yes ☐ No

7. How long H-2A workers are working in your farm in 2016-2017?

8. Do you prefer to stay H-2A workers longer in your firm rather than just for 10 months?
☐ Yes ☐ No

9. Do you prefer H-2A workers to work multi task in the field rather than specific task?
☐ Yes ☐ No

10. Do you think there should be modification on the H-2A program?
☐ Yes ☐ No

(Question 8, 9 and, 10 will give about the farmers view on H-2A program and favoring H-2C program)

Appendix 3. List of presentations related to this study

Osti, S., Bampasidou, M., & Fannin, J. M. (2018). Revisiting Farm efficiency of Rice-Crawfish farmers: Accounting for the H-2A program (No. 274339). Agricultural and Applied Economics Association. **(Around 20 people attended)**

Osti, S., Fannin, J. M. and Bampasidou, M. (2018). Willingness to Pay and Importance of Supervision for H-2A Workers in Louisiana Crawfish and Alligator Farm. LSU AgCenter Annual Conference. December-12, 2018, Baton Rouge, LA. **(Around 30 people attended)**

Osti, S., Bampasidou, M. and Fannin, J. M. (2018). Production Efficiency of Louisiana Rice Farms Using Rotation Crops. Louisiana Rice Field Day, June-27, 2018. Rice Research Station, LSU AgCenter, Crowley, LA. **(Around 50 people attended)**

Osti, S., Fannin, J. M. and Bampasidou, M. (2018). Willingness to Pay and Importance of Supervision for H-2A Workers in Louisiana Crawfish and Alligator Farm. Louisiana Fisheries Forward Summit. March-06, 2018, Kenner, LA.

Osti, S., Hassan M. R. and Gillespie, J. (2016). Study on Impacts of Labor Policy Changes on Louisiana Seafood Processing and Production. 4th Annual Summit for the Louisiana Commercial Fishing and Seafood Industry. March-01, 2016, Kenner, LA.

Osti, S., Hassan M. R. and Gillespie, J. (2016). Extent of Use of H-2A and H-2B Labor in Louisiana Crawfish and Alligator Production. 2016. Challenges of Natural Resource Economic Research in Coastal Systems. 5th National Forum on Socioeconomic Research in Coastal Systems, March 20-22, 2016, New Orleans, LA.