ACT 229

Annual Report to the Legislature

December 2017

State of Hawaii
Department of Labor and Industrial Relations
WORKFORCE DEVELOPMENT DIVISION

ACT 229 Funding Report

Fiscal Year (FY) 2017

Overview

Act 229 was enacted by the Twenty-Eighth Legislature (2016) of the State of Hawaii to implement the recommendations of the Hawaii Agriculture Workforce Advisory Board to create an agriculture workforce development pipeline initiative conducting training on all islands for teachers and school administrators in agriculture self-sufficiency.

In an effort to move the pipeline initiative forward, the Hawaii Agriculture Workforce Advisory Board recommended using the funding provided in Act 229 to enhance the training to teachers and school administrators through two specific activities (a CASE Institute Training and a Future Farmers of America [FFA] Advisors Workshop).

Activity 1: CASE Institute Training and Classroom Support

The Department of Education Career and Technical Education (CTE) implements its Agriculture Education program through the Natural Resources (NR) Career Pathway. Courses are offered through eight programs of study through a sequence of courses in the following areas. Animal Systems, Natural Resources Biotechnology, Fisheries, Forestry, Environmental Resource Management, NR Production, Plant Systems, and NR Entrepreneurship. The first course in each of these programs of study is a foundation course called NR Core. In School Year 2016-17, 1684 students in 39 high schools were enrolled in the NR Core class.

Curriculum for Agriculture Science Education (CASE) is an ambitious project started by the National Council for Agricultural Education in 2007. The project's goal is to implement a national curriculum for secondary agricultural education that provides a high level of educational experiences to enhance the rigor and relevance of agriculture, food, and natural resources (AFNR) subject matter. In addition to the curriculum aspect of CASE, the project ensures quality teaching by providing extensive professional development for teachers that leads to certification.

The funding for this portion of Act 229 was dedicated to conducting professional development for high school teachers who are teaching or potentially will be offering the NR Core course at their school. The professional development activity offered Natural

Resource teachers the tools they need to provide a rigorous educational foundation in Agriculture Science Education.

To meet this purpose, the Department of Education in partnership with the College of Tropical Agriculture and Human Resources (CTAHR) hosted the Curriculum for Agriculture Science Education (CASE) Institute Training: Introduction to Agriculture Food and Natural Resources (AFNR) at the University of Hawaii at Manoa campus. The two week summer training program targeted high school teachers from across the state seeking to implement agricultural curricula at their respective institutions. The concepts were taught using activity-based, project-based, and problem-based instructional strategies through the use of tools and equipment in a laboratory type setting. The program provided these high school teachers with the foundation and resources to introduce their students to the range of agricultural opportunities and the pathways of study available for them to pursue. Nineteen high school teachers from across the United States attended the eight day workshop held between June 12 - 22, 2017. Of the nineteen participants, thirteen (13) were from Hawaii including one from Kauai High School and one teacher from Konawaena High School. All of the teachers responding to the evaluation at the end of the institute planned to implement or add to their existing teachings - the CASE curriculum in their classrooms for school year 2017-2018.

Upon completion of the CASE Institute, the Department of Education through funding provided through Act 229 allocated funds directly to the schools where teachers have been trained in CASE curriculum and have agreed to implement the CASE curriculum during school year 2017-18 and to purchase the classroom supplies and small equipment needed to instruct students in the CASE curriculum. It was the Department of Education's goal to have seven (7) schools pilot and implement the case curriculum. A total of eight (8) schools received funding to purchase supplies and necessary lab equipment to support implementation of the CASE curriculum during school year 2017-18. The schools have made purchases through the first semester as they integrate the CASE curriculum into existing Natural Resources (NR) Core courses at their individual schools. Each teacher has had the flexibility to implement the curriculum to address the State Standards for the Natural Resources Core class. Seven teachers from Leilehua, Waipahu, McKinley, Castle, and Aiea High Schools have applied for Hawaii Department of Education Professional Development (PDE3) credits. The Department of Education requires the teachers to implement the curriculum and submit a portfolio of student work with teacher reflections. The portfolio is reviewed by the DOE and credit is awarded once all portfolio requirements are satisfactorily addressed.

Another positive benefit of the funding provided by the Legislature for teacher training and the hosting of the CASE Institute in Hawaii has been the scope of teachers attending the training program - with the extension beyond just the teachers in the agricultural science field (35.5%), indicating an expansion of the role of agriculture in schools.

Activity 2: Future Farmers of America (FFA) Advisors Workshop

A goal of the of the State Legislature through Act 229 and Act 099 (which established the Hawaii Agriculture Workforce Advisory Board) is to expand the pipeline of agricultural workers to address pending shortages in Hawaii's agricultural workforce. A part of the vision encompasses the promotion of statewide growth in the Hawaii Future Farmers of America (FFA) chapters in public secondary schools. The Hawaii FFA is the agricultural student leadership program that is part of the Natural Resources curriculum of the Hawaii State Department of Education.

The Department of Education Career and Technical Education implements its Agriculture Education program through the Natural Resources Career Pathway. Teachers teaching in the Natural Resources Career Pathway teach courses in Animal Systems, Natural Resources Biotechnology, Fisheries, Forestry, Environmental Resource Management, Natural Resource Production, Plant Systems, and Natural Resource Entrepreneurship – all of which impact agriculture self-sufficiency.

The Department of Education conducted a two day workshop (July 27 and July 28, 2017 at the Monsanto facilities in Kunia) designed for current, new or prospective FFA Advisors who are currently teaching in the Natural Resources Career Pathway. A total of ten (10) agriculture teachers from eight (8) schools participated in the workshop.

The workshop attendees were provided an overview of the National FFA programs and awards available to student members; training for FFA online management systems on ffa.org; a review and update of Hawaii Career Development Events and information on the Agri-Science Implementation rollout.

The attendees also reviewed and discussed the Hawaii Agriculture Education and FFA Strategic Planning Action Steps.

In 1975, FFA chapters were active in over thirty (30) high schools statewide with as many as 600 FFA students. However, the number of FFA chapters and FFA students drastically decreased until last year.

There was a marked increase from 216 members and 10 chapters in 2014 to 311 members and 16 chapters in 2016. This was an increase of 44 % and 60% respectively.

The funding provided by the Hawaii State Legislature for the workshops/conferences mentioned in this report as well as the funding provided by the Legislature for agriculture workforce development to the Department of Labor and Industrial Relations over the past few years has increased and will continue to provide awareness and interest in the field of agriculture to students in the State's public schools.

Activity #1

CASE Institute

CASE

CASE Institute Scope and Sequence

Introduction to Agriculture, Food, and Natural Resources

Day	Estimated Time	Discussion Items	Activity and Deliverables
Orientation	TBA	Registration	
	TBA	• General Session • Introduction of Host, Site. and Site Logistics • Introduction of Lead Teachers • CI Opening Session Presentation • CASE Institute Expectations and Portfolio	• CASE Curriculum Installation • Navigating the Curriculum • Activity 1.1.2 Agriscience Notebooks
Day 1	8:00 – 12:00	• Site Logistics - Host • Unit 1 The Circles of Agricultural Education • Lesson 1.1 Agriculture Everyday • Lesson 1.1 Teacher Notes and features • Lesson 1.2 Planning Your Future • Activity 1.2.1 Career Portfolio • Activity 1.2.3 Learning Beyond the Classroom	• Activity 1.1.1 Basic Provisions • Activity 1.1.3 Poppin' with Orville • Activity 1.1.4 Grown in the USA • Activity 1.2.2 Agriscience Careers and Me • Activity 1.2.4 Joining A Team • Activity 1.2.5 Game Time
	12:00 – 1:00	Lunch	
	1:00 – 5:00	• Unit 2 Communicating Today • Lesson 2.1 Listen to me • Activity 2.1.2 First Impressions • Activity 2.1.5 What Does It Mean? • Lesson 2.2 Let's Get Together	• Activity 2.1.1 Communication Charades • Activity 2.1.3 I'd Like to Introduce • Activity 2.1.4 Speak from the Heart • Activity 2.2.1 See No Evil, Speak No Evil • Activity 2.2.2 Call on Me • Project 2.2.3 Teaming Up
	Homework:	☐ Activity 1.1.2 Agriscience Notebook, Activity 1.2.2 Agriscience Careers and Me Part Two Survey ☐ Activity 2.2.3 Teaming Up – Norms list and Rubric ☐ Pre-read material for following day ☐	

Day	Estimated Time	Discussion Items	Activity and Deliverables
Day 2	8:00 – 12:00	• Finish Project 2.2.3 Teaming Up • Unit 3 The Science of Agriculture • Lesson 3.1 Ag. Safety and Measurement • Lesson 3.2 Agriscience Investigators	• Activity 3.1.1 Lab Tech Training • Activity 3.1.2 In Case of Accidents • Activity 3.1.3 You Make the Rules • Activity 3.1.4 Measure Me • Activity 3.2.1 Organize and Classify
	12:00 – 1:00	Lunch	
	1:00 – 5:00	• LabQuest Training • Project 3.2.4 Mad Science • Unit 4 Natural Resources • Lesson 4.1 Starting from the Ground Up • Mini-Lesson Purchase Manual and Priorities	• Activity 3.2.2 Quest for Data • ph Sensor Use and Calibration • Activity 3.2.3 Acids and Bases • Activity 4.1.1 Separating the Pieces • Activity 4.1.2 Extracting Air • Activity 4.1.3 Moving Earth
	Homework:	☐ Pre-read material for following day ☐	
Day 3	8:00 – 12:00	• Finish Activity 3.1.4 Measure Me • Lesson 4.2 The Whole Soil	• Activity 4.2.1 Getting the Feel for Soil • Activity 4.2.2 On Your Mark, Get Set, FLOW! • Activity 4.2.3 Soil Buffers
	12:00 – 1:00	Lunch	
	1:00 – 5:00	• Lesson 4.3 Water World • Activity 4.3.2 Running Water	• Project 4.3.1 Story of Water • Activity 4.3.3 Spread of Pollutants • Activity 4.3.4 Testing for Quality • Project 4.3.5 Drink This
	Homework:	☐ Activity 4.2.3 Lab Report, Project 4.3.5 Lab Report, ☐ Project 4.3.1 Story of Water posted to COP, Download/Install mapping software ☐ Pre-read material for following day ☐	
Day 4	8:00 – 12:00	• Lesson 4.1 Living in Harmony • Activity 4.4.4 Walk Across the Country • Unit 5 Plants and Animals • Lesson 5.1 Totally Cellular • Microscope Use	• Activity 4.4.1 Eat or Be Eaten • Activity 4.4.2 Passing Gas • Project 4.4.3 Ecosystem Exploration • Activity 5.1.1 Cell Parts • Activity 5.1.2 Nuclear Onion
	12:00 – 1:00	Lunch	

Day	Estimated Time	Discussion Items	Activity and Deliverables
Day 4 cont.	1:00 – 5:00	• Activity 5.1.5 Our Physical Features • Lesson 5.2 All About Plants	• Activity 5.1.3 Extracting DNA • Activity 5.1.4 DNA Models • Project 5.1.6 Family Traits • Activity 5.2.1 Dissecting a Salad • Project 5.2.2 Build a Bloom • Activity 5.2.3 Bean Sprouts
	Homework:	☐ Pre-read material for following day ☐	
Day 5	8:00 – 12:00	• Lesson 5.3 Plant Needs	• Part Three 4.3.2 Passing Gas • Activity 5.2.4 Sugar from the Sun • Activity 5.2.5 Refueling Plants • Activity 5.3.1 Standing Tall with Water • Activity 5.3.2 Grown in the Sun • Activity 5.3.3 Digging Up Nutrients
	12:00 – 1:00	Lunch	
	1:00 – 5:00	• Lesson 5.4 Animals in Ag	• Activity 5.3.4 Life, Death, and pH • Project 5.3.5 Optimal Growth Ranges • Activity 5.4.1 What am I? • Activity 5.4.2 Internal Body Systems • Project 5.4.3 Animal Anthropology • Finish Activity 5.3.1 Standing Tall with Water
	Homework:	☐ Activity 5.4.2 Internal Body Systems, Project 5.3.4 Optimal Growth Ranges, view Energy Sensor video ☐ Pre-read material for following day, log-in to CASE online ☐	
Day 6	8:00 – 12:00	• Final observations 4.3.2 Passing Gas (part 4) • Activity 5.5 Animal Care • Activity 5.5.1 Food for Animals • Lesson 5.6 Edible Agriculture • Activity 5.6.1 Food Journal	• Activity 5.2.3 Bean Sprouts (part 3) • Activity 5.4.4 Priority Decisions • Activity 5.5.2 Keeping Warm • Activity 5.5.3 Deception of Perception • Activity 5.5.4 The Situation Room • Problem 5.5.5 Animals as Food • Activity 5.6.2 Chill to Be Safe
	12:00 – 1:00	Lunch	

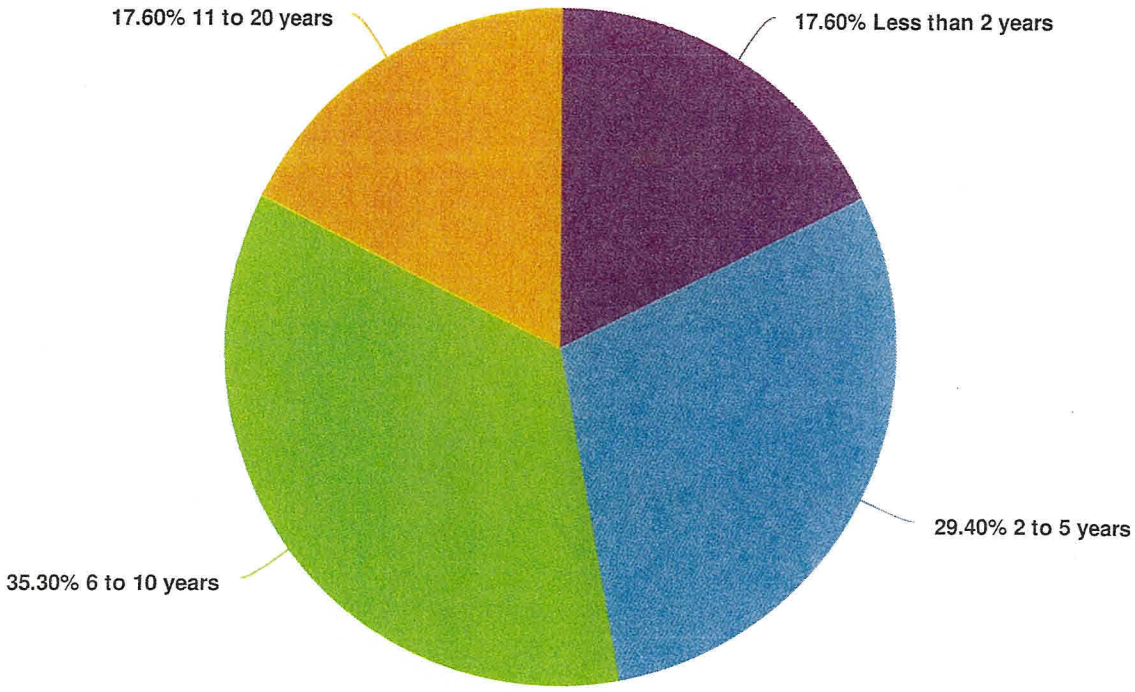
Day	Estimated Time	Discussion Items	Activity and Deliverables
Day 6 cont.	1:00 – 5:00	• Unit 6 Agricultural Power and Technology • Lesson 6.1 Energy in Agriculture • Project 6.1.1 Energy Sources • CASE Mini-Lesson: Assessment and Certification	• Project 5.6.3 From Farm to Fork • Problem 5.6.4 Cereal Killers • Activity 6.1.3 Electrical Power • Activity 6.1.3 Solar Array • Activity 6.1.5 Clean Smoke
	Homework:	☐ Activity 6.1.5 Clean Smoke Lab Report ☐ Pre-read material for following day ☐	
Day 7	8:00 – 12:00	• Observe 5.2.3 Bean Sprouts • Observe 5.6.3 Chill to be Safe • Lesson 6.2 This is My Land	• Activity 6.2.1 Stake Your Claim • Activity 6.2.2 Satellite Positioning • Activity 6.2.3 Finding Your Way • Activity 6.2.4 The Precision of GPS
	12:00 – 1:00	Lunch	
	1:00 – 5:00	• Lesson 6.3 How It's Made • Project 6.3.5 Tools of the Trade	• Project 6.2.6 Dangers of Rezoning • Activity 6.3.1 How Will It Measure Up? • Activity 6.3.2 Drawing to Scale • Activity 6.3.3 Drawing Up Plans • Project 6.3.4 Road Trip
	Homework:	☐ Activity 6.3.3 Drawing Up Plans, Project 6.3.4 Road Trip ☐ Pre-read material for following day	
Day 8	8:00 – 12:00	• CASE Mini-Lesson: Curriculum Development • Unit 7 Looking Ahead • Lesson 7.1 Your Future in Agriscience • Revisit Project 1.3.2 Career Portfolio • Project 7.1.3 My First Job • Project 7.1.4 Career Gallery Walk • End of Course Reflections	• Finish Activity 5.2.3 Bean Sprouts • Finish Activity 5.6.2 Chill to be Safe • Project 6.4.5 Birdhouse Needed • Problem 7.1.1 Solving World Hunger • Project 7.1.2 Into the Future • Final Portfolio/Checklist • End of Course Assessment/Survey • End of Institute Awards and Certification
	12:00 – 1:00	Lunch and dismissal	

CASE

Introduction to Agriculture, Food, and Natural Resources Topical Course Outline

Lesson	Title	Days
Unit 1 The Circles of Agricultural Education		
Lesson 1.1	Agriculture Everyday	5
Lesson 1.2	Preparing for Your Future	6
Unit 2 Communicating Today		
Lesson 2.1	Listen to Me	6
Lesson 2.2	Let's Get Together	6
Unit 3 The Science of Agriculture		
Lesson 3.1	Agriscience Safety and Measurement	5
Lesson 3.2	Agriscience Investigators	8
Unit 4 Natural Resources		
Lesson 4.1	Starting from the Ground Up	4
Lesson 4.2	The Whole Soil	7
Lesson 4.3	Water World	11
Lesson 4.4	Living in Harmony	9
Unit 5 Plants and Animals		
Lesson 5.1	Totally Cellular	8
Lesson 5.2	All About Plants	7
Lesson 5.3	Plant Needs	8
Lesson 5.4	Animals in Ag	8
Lesson 5.5	Animal Care	9
Lesson 5.6	Edible Agriculture	7
Unit 6 Agricultural Power and Technology		
Lesson 6.1	Energy in Agriculture	9
Lesson 6.2	This is My Land	9
Lesson 6.3	How It's Made	13
Unit 7 Looking Ahead		
Lesson 7.1	Your Future in Agriscience	7

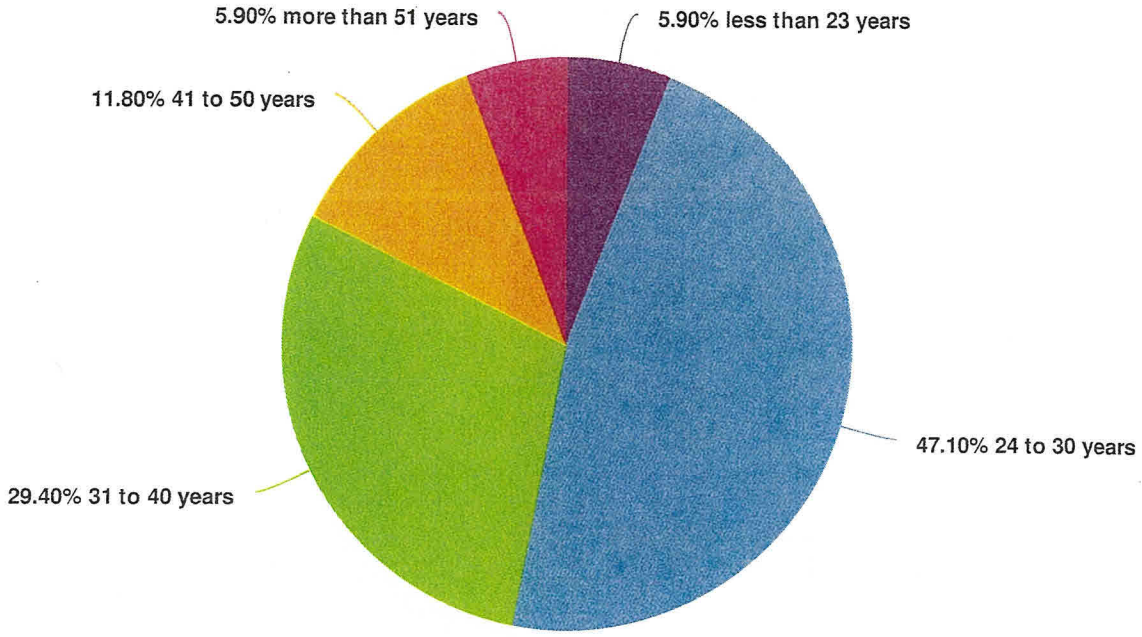
1. How long have you been teaching at the middle, high school, or college level?



Value	Percent	Responses
Less than 2 years	17.6%	3
2 to 5 years	29.4%	5
6 to 10 years	35.3%	6
11 to 20 years	17.6%	3

Total: 17

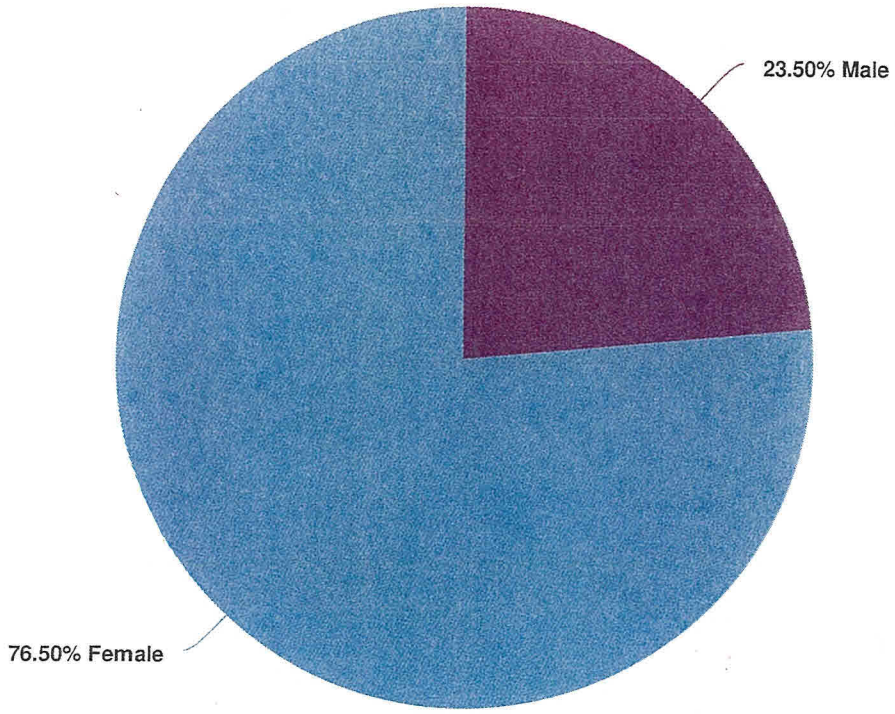
2. What is your age?



Value	Percent	Responses
less than 23 years	5.9%	1
24 to 30 years	47.1%	8
31 to 40 years	29.4%	5
41 to 50 years	11.8%	2
more than 51 years	5.9%	1

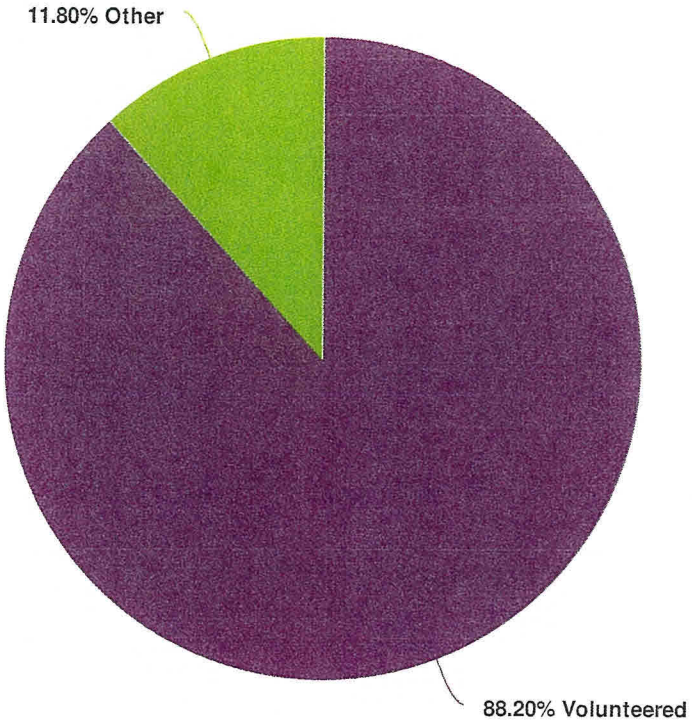
Total: 17

3. What is your gender?



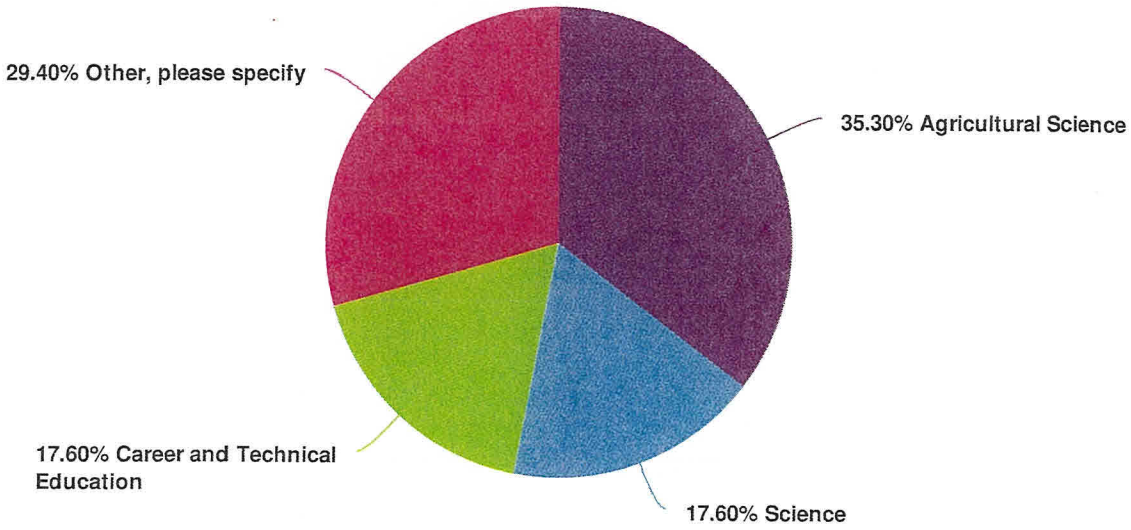
Value		Percent	Responses
Male		23.5%	4
Female		76.5%	13
			Total: 17

4. How were you selected to be a CASE teacher?



Value	Percent	Responses
Volunteered	88.2%	15
Other	11.8%	2
		Total: 17

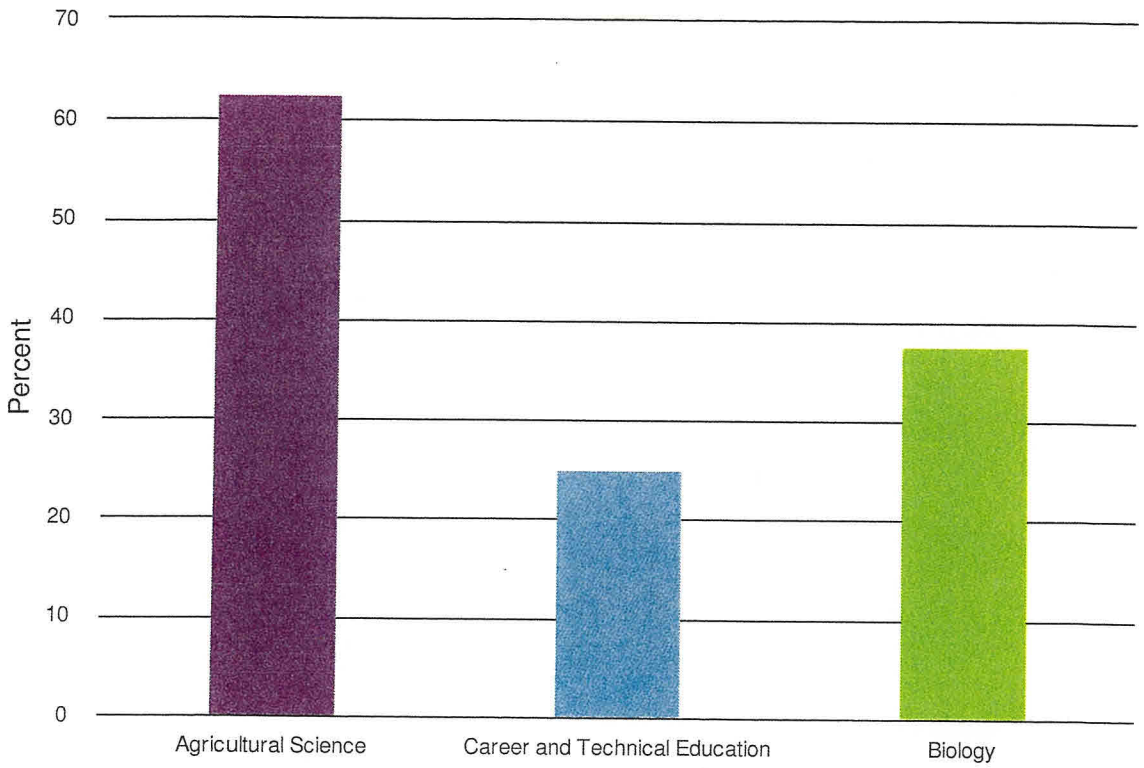
5. What is your major area of teacher certification?



Value		Percent	Responses
Agricultural Science		35.3%	6
Science		17.6%	3
Career and Technical Education		17.6%	3
Other, please specify		29.4%	5

Total: 17

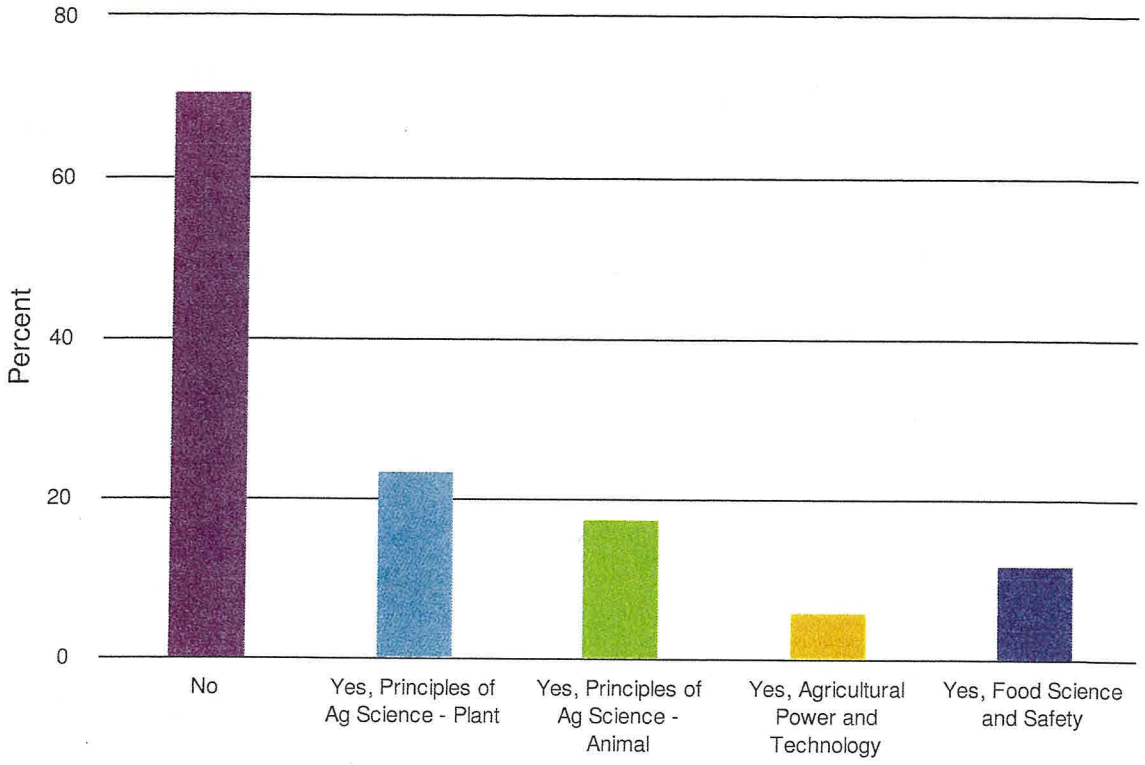
6. What additional areas of certification do you have?



Value	Percent	Responses
Agricultural Science	62.5%	5
Career and Technical Education	25.0%	2
Biology	37.5%	3

Other, please specify	Count
Total	0

7. Are you certified in another CASE course?



Value	Percent	Responses
No	70.6%	12
Yes, Principles of Ag Science - Plant	23.5%	4
Yes, Principles of Ag Science - Animal	17.6%	3
Yes, Agricultural Power and Technology	5.9%	1
Yes, Food Science and Safety	11.8%	2

Activity #2

FFA Advisor's Workshop

FFA Advisor's Workshop
July 27 and 28, 2017
Monsanto Facilities
Kunia, Oahu

This workshop is designed for current and new FFA Advisors. The workshop outcomes are:

- Review National FFA programs and awards available to student members
- Review and provide training for FFA online management systems on ffa.org
- Review and update Hawaii Career Development Events
- Review and update FFA County and State schedule of events

Agenda

Day One: Thursday, July 27, 2017, 8:30 a.m. to 4:30 p.m.

National FFA Program: Presenter Ben Meyer, Western Region LPS Specialist

8:30 – 8:45	Welcome, overview, introductions, and plan for the day
8:45 – 9:15	Overall review and context of Agriculture Education, Tri-Ad, Curriculum, SAE, and FFA.
9:15 – 10: 00	FFA National Program Report / DOE FRS
10:00 - 10: 15	Break
10:00 – 12:00	SAE based awards and recognition programs; State and American FFA Degrees
12:00 – 12:15	DLIR Director Linda Chu Takayama, Discussion with DLIR Workforce Development Committee and legislators, Agriculture Education and FFA strategic goals and needs.
12:15 – 1:00	Lunch: Networking for teachers with DLIR Workforce Development Committee and Legislators
1:00 – 2:30	SAE based awards and recognition programs; proficiencies
2:30 – 2:45	Break
2:45 – 4:00	National Chapter program
4:00 – 4:30	Wrap up and questions

FFA Advisor's Workshop
July 27 and 28, 2017
Monsanto Facilities
Kunia, Oahu

Day two: Friday July 28, 2017, 8:30 am to 4:30 p.m.

Hawai`i FFA Program: Presenters, Michael Barros and Jackie Tichepco

8:30 – 10:00	Career Development Events (CDE) review
10:00 – 10:15	Break
10:15 – 12:00	Agri-Science Implementation role out
12:00 – 12:30	Lunch:
	Speaker - Greg Thompson
12:30 – 2:00	Overview of DLIR grant allocation, outcomes, and deliverables
	• Washington leadership Conference, 2017.
	• Student FFA Leadership: Aug. 29-30, 2017.
	• CASE Institute, follow-up
2:00 - 2:15	Break
2:15 – 3:15	Year Calendar and Activities
3:15 – 4:00	Next steps toward long range goals
4:00 -4:30	Wrap up, questions.

Hawaii Ag Education and FFA Strategic Planning Action Steps – May 6, 2017

Growth

- Explore opportunities to partner with state science fair for agriscience projects.
  - Lead Personnel: Ken (interim)
  - Progress: Ken has met with the Hawaii Academy of Science (HAS) director to find a way to identify schools with science project programs that might be able to support FFA Agriscience projects. The HAS shares our belief in the importance of providing opportunities for the study of STEM through Natural Resources. The director is available to speak at our upcoming meetings.
- Adopt SAE recordbook practices for all students.
  - Lead Personnel: All ag/NR teachers
  - Progress: Training July 27-28 with examples and hard copy record books with Ben Meyer
- Make outreach to new potential HSATA members and grow NAAE membership.
  - Lead Personel: County Advisors
  - Progress:
- Encourage each chapter to meaningfully grow FFA membership to better account for total class enrollment.
  - Lead Personel: All ag/NR teachers
  - Progress:

Staffing

- Maintain (by county) a clear and detailed accounting of ag/NR teacher openings, new hires, and potential openings either through growing in new locations or retirement of existing teachers. Report information to the state level.
  - Lead Personnel: County Advisors
  - Progress: Ben has posted HI Ag Teacher Directory to Google Docs as a startin point.
- Outline concept for sourcing and filling a dedicated state FFA staff position (explore concepts of dual appointment with partner organization and/or state agency).
  - Lead Personnel: Michael, Jackie, et. al.
  - Progress:
- Obtain clarification from DOE HR office about open ag ed/NR positions, how they're advertised, and how mainland teachers could potentially apply or be aware of openings.
  - Lead Personnel: Michael
  - Progress:

Boosters Alumni

- Grow base of potential lifetime alumni members.
  - Lead Personnel: Greg Thompson
  - Progress: Ben has provided Greg with lifetime membership brochures and enrollment forms
- Continue to support local alumni chapter formation.
  - Lead Personnel: All interestedag/NR teachers and supporters
  - Progress: Konawaena has chartered and can offer a leading example

Accountability

- Develop a tracking spreadsheet to document successes and accomplishments as well as post-graduate status of students benefitting from legislative funds.
  - Lead Personnel:
  - Progress:
- Develop talking points and priority areas to share with ag/NR teachers so each understands what the legislative funds support and why the funds are important.
  - Lead Personnel: Shaun
  - Progress:
- Establish rapport with legislature and maintain frequent contact with key members.
  - Lead Personnel: Shaun
  - Progress:

Hawaii Ag Education and FFA Strategic Planning Action Steps – May 6, 2017

Students

- Develop plan to meaningfully prepare for national competitive events while passing on national event knowledge year-after-year.
  - Lead Personnel:
  - Progress: Possible idea to implement a "reporting out" model that is required of any teacher who takes students on a mainland trip. Possibly pay a $100 honorium for their time to develop a report and deliver a workshop at a teacher P.D. to help prepare the next round of teachers and students to compete and travel.
- Identify key students with award eligible SAEs to apply for state and American Degrees and state proficiencies.
  - Lead Personnel: Each ag/NR teacher
  - Progress
- Identify at least one local opportunity per year to involve legislators in a local or county FFA event.
  - Lead Personnel: Each ag/NR teacher
  - Progress

Fiscal

- Reinstate Ajifu Foundation 501c3 status.
  - Lead Personnel: Ken
  - Progress: Mike and Ken are searching for a lawyer to complete our 501 C3 status obligations. Ken will ask the Ajifu Foundation board to pay for the legal costs. If anyone has access to a good attorney or firm specializing in this and/or can do some or all of the work pro bono (for free as a public service) please let us know
- Work with Representative Onishi to identify ag industry partners that have expressed interest in donating to ag education and the HI FFA.
  - Lead Personnel:
  - Progress