

Agricultural Warriors: National Government Programs and Technology Utilization in the Province of Aklan, Philippines

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Abstract

The study aims to determine the programs and services by the Department of Agriculture availed by the farmers and fisherfolks, their access and utilization of technology for use in evidence-based planning, policymaking, budgeting, monitoring, and evaluation in the provincial agricultural sector. The study was primarily quantitative in approach specifically the descriptive research design. Respondents of the study were the farmers, farm workers/laborers, livestock raisers, and fisherfolks randomly selected from the sampled municipalities in the province of Aklan. The study employed Multistage Random Sampling with 400 respondents proportionately represented based on sex. The study utilized a survey questionnaire prepared by the UPNCPAG. Results revealed that there are farmers and fisherfolks in the province who are not yet enrolled in the RSBSA despite its implementation in 2012. The government's program on seeds and fertilizers distribution was availed by most of the agricultural stakeholders in the province. Most respondents reported obtaining their planting materials from their own supply. Traditional methods/devices are still mainly practiced in planting, nutrient management, harvesting, post-harvesting, freezing, and grading. While, machinery/equipment is utilized for land preparation. Furthermore, the respondents mostly rely on past experience in the case of fertilization and pesticide use, as they are perhaps not updated and are not willing to take risks in their production. The Internet is almost unutilized in any agricultural activities in the province. They may not be technologically updated, not capable, and do not have access to the internet.

Keywords: *farmers, fisherfolks, crops, livestock, fishing*

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Introduction

The Philippines is an agricultural country having bountiful natural resources. Its soils are fertile and tillable and are fitting to various crops and vegetation; and its seas are abundant in both aqua-marine plants and animals. The country's agro-fisheries resources, therefore, can provide a very promising ground for establishing a bedrock of a very strong economy.

In the province of Aklan, farming is the basic livelihood in the interior while fishing is the basic livelihood in the coasts. The province posts potentials in the production of high valued and fiber crops. In short, Aklan depends greatly on agriculture. The massive and sustained education and research in agriculture production, the implementation of national program in agriculture, well-established marketing strategies, as well as the support of the agribusiness industry and other private and non-government sectors, result to better production and higher income of the farmers. Palay is still the number one crop grown in the province. Further, fishponds and offshore fishing also provide huge employment for Aklanons. Aquaculture constitutes a significant component in the province's fishery industry. The province has a total fishpond area of 7,807.14 hectares. Aklan is also sufficient in meat and other livestock and poultry products.

Despite these ample resources, the majority of the local farmers and fisher folks still remain in the sector that falls below the poverty line or even below. Statistics revealed that this sector receives the lowest daily wage compared to their counterparts working in the industry and service sectors (PSA, 2018). This scenario among Filipino farmers is attributed to the insufficient attention given to the agricultural sector (Lubang, 2019). Further, the fisherfolks remain poor because they sell their products at a low price and buy commodities like feedstock at a high price. In short, their expenses exceed their income (Cooperative Development Authority, 2021).

The Department of Agriculture (DA) is mandated to hit the target of promoting agricultural and rural development through the provision of policy framework, public investments, and support services needed for domestic and export-oriented agricultural enterprises (UPNCPAG, 2021). Despite DA's effort in providing programs and projects aimed at alleviating the lives of the members of the agricultural sector, still a handful of them experience poverty.

Because of this observation, the researchers involved in this research project wish to collect firsthand data and perspectives from farmers and fisherfolks to better understand their economic status and needs from which DA programs can be intensified for the farmers and fisher folks to benefit. Likewise, since there are very limited and not recent studies conducted along this line, it is therefore advantageous that this study was conducted.

The main goal of this research project is to assess the services/programs provided by the Department of Agriculture and identify the technology utilization of farmers and fisherfolks for evidence-based planning, policymaking, budgeting, monitoring, and evaluation in the provincial agricultural sector.

Materials and Methods

The study used the descriptive research design and adopted survey research methods. The study's respondents were the farmers, farm workers/laborers, livestock raisers, and fisherfolks randomly selected from the sampled municipalities in the province of Aklan.

Multistage Random Sampling was employed to identify 400 respondents proportionately represented by gender. The number of agricultural or coastal municipalities chosen was likewise in proportion with the number of agricultural or coastal municipalities in the congressional districts.

Systematic sampling was employed to select the respondents for an agricultural area. On one hand, Kish Grid was utilized to identify the fisher folk respondents, who had three starting points: the barangay hall, health center, and barangay captain's residence.

The study utilized a survey questionnaire prepared by the partner agency – UPNCPAG. It has undergone review and revisions by the PASUC and the DA. The instrument was approved for use by the UPMREB Ethics Review Panel.

Data gathering was done through interviews; this is the most efficient and effective way of reaching the farmers, farmworkers/laborers, and fisherfolks during the survey fieldwork.

Results and Discussions

Validation of the Registry System for Basic Sectors in Agriculture

Of the 400 respondents surveyed for this study, 56% of them were male while 44% were female. Majority of the respondents were married (82%), followed by single (9%), widowed (7%) and were separated (1%). The mean age of the respondents is 56 years old. In terms of educational attainment, most (28%) of the respondents were high school graduate. This was closely followed by college graduate (22%) and some elementary graduate (10%), respectively.

As to the demographics of people with special status, 32.50% of the respondents were senior citizens, 2.50% were Persons with Disabilities (PWDs), and 2.00% were members of indigenous people (IP) groups or communities. These IP groups were known as Aklanon Bukidnon, Panay Bukidnon, Boracay Tumandok, and Mata IP Group Malay Ati Tribal Association.

The average household size in the Province of Aklan is 4, with 75.50% of the respondents declared themselves as head of the household. The average number of males in the household is 2 while the number of females is 2. The average household members who are currently working in the agriculture and fishery sector (e.g., farmer, farmworker, livestock raiser, fisherfolk) is also 2. The average number of children below the age of 21 years old is 1.0, of which an average of 1.0 is currently attending school. In terms of access to government services, 97.75% of the respondents have a government ID. Most of the respondents' IDs are PhilHealth ID (32%), Senior Citizen's ID (25%) and SSS (10%).

Barangay officials and employees (96%) constitute the most popular source of information on government services, programs, and projects. The average time to reach their municipal or city government offices was reported to be at around 24 minutes.

In terms of **coverage of government programs**, 361 (78.30%) out of 400 of the respondents, were already registered in the Registry System for Basic Sectors in Agriculture (RSBSA). Among those who are not yet enrolled in the RSBSA, their most cited reason is that they are not informed and they have no idea about the program/RSBSA. On the other hand, 33.50% of the respondents reported to be members of the Social Security System (SSS). Likewise, 22.00% of them also reported that their immediate family is a beneficiary of the Pantawid Pamilyang Pilipino Program (4Ps).

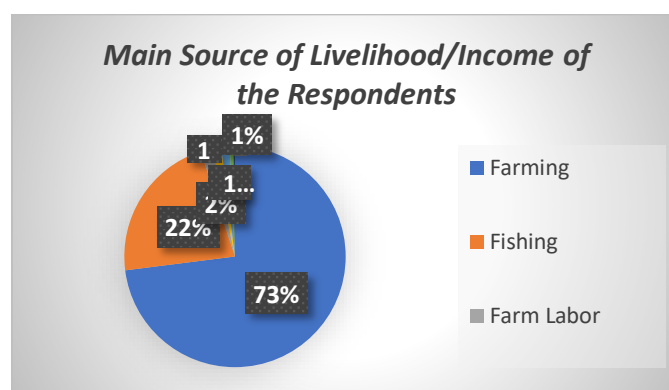


Figure 1. Main Source of Livelihood/Income of the Respondents

Farming was cited as the main livelihood or source of income (73.00%) of the respondents, followed by fishing (22.0%). On the other hand, around 20.50% of the respondents also reported to having received money or remittances from relatives living in another city or province, while 12.25% reported to having received money or remittances from relatives living or working in another country. In terms of land ownership, 67.25% of the respondents own the land where their houses are situated.

On the subject of farmer and fisherfolk affiliation, most of the respondents were found affiliated with any farmer or fisherfolk association or cooperative (62.50%). Some of the most cited reasons for their non-membership are that they are not interested (28.67%), they have no idea (16.67%), they are not informed (9.33%), and mostly some refused to answer why they are not joining associations or cooperatives (40.0%).

Assessment of the Department of Agriculture (DA) Programs and Projects

In order to properly assess the DA-administered programs and projects in the Region, the survey resolved to identify first the leading sources of information on agricultural services

offered by the government. Based on the survey results, barangay officials and employees remain to be the primary source of information (99.75%).

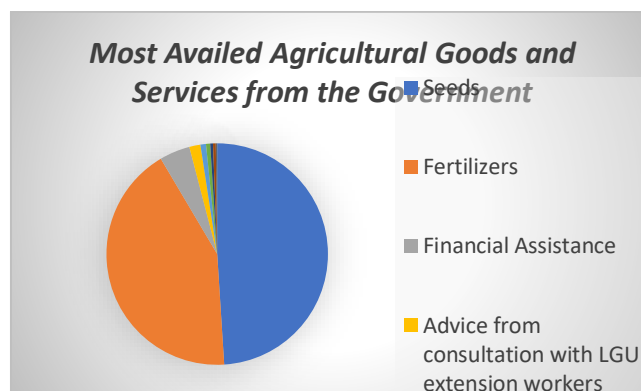


Figure 2. Most Aailed Agricultural Goods and Services from the Government

Seeds (60.5%) and fertilizers (52.5%) were among the most aailed agricultural goods and/or services from the government. The biological control agent, rehabilitation of farm production facilities, trainings, motorized boat, fishnets boats, were the least aailed agricultural goods/and services provided by the public sector.

Few respondents (1.75%) reported to having received agricultural services from NGOs where seeds and fertilizers were the aailed agricultural goods and/or services.

Technology Utilization

General

On the manner of planting, stocking, and materials selection, most of the respondents obtain their planting materials from their own supply of crops/seeds/seedlings/and/or fingerlings (57.25%), followed by the Department of Agriculture (19.50%), vendors/suppliers (16.50%) while some of them are from government in general (5.25%) and local government (1.50%). Most (61.00%) respondents reported that their planting materials and/or fingerlings and stocks were more high yielding, more resistant to pest (61.00%) and more resistant to harsh climatic conditions (59.50%). Most of the respondents reported that the leading cause that prevents them from using planting/stocking materials that are more high-yielding and more resistant to pests or resistant to harsh climatic conditions is the high cost/lack of capital (70.54%).

In terms of preparation for farming/crop production, livestock and poultry raising, and aquaculture, use of seedbeds (58.20%) and pre-germination/direct seeding (34.41%) was found to be the most usual method of seedling preparation_for crop farmers, while use of hatcheries (2.57%) was the most popular strategy for both poultry and fingerling preparation for poultry and aqua farms.

On the manner of obtaining information on prices and availability of inputs, majority of the respondents (93.89%) do not use the internet to learn about the price and availability of inputs such as planting materials, fertilizers, pesticides, and fingerlings.

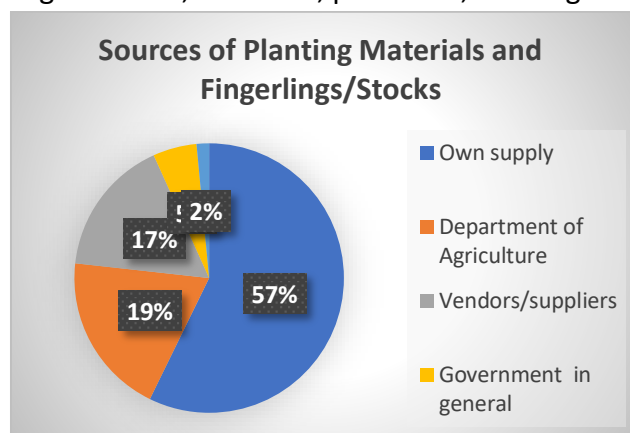


Figure 3. Sources of Planting Materials and Fingerlings/Stocks

Most of the respondents (76.53%) use equipment and technology for production, maintenance, and upkeeping of their respective production sites (i.e., farm, livestock/poultry farm, or fish pen/fish cage). Some of the most popular equipment and/or technologies used include hand turtle (46.86%) and hand tractor (39.11%). Manual harvesting (93.75%) was found to be the most popular way of harvesting crops or products among the respondents, while 4.8% reported the use of mechanized equipment. In the case of mechanized harvesting, the leading function is combined harvester.

In the case of agricultural products requiring the use of drying as a method, use of street pavements (62.72%) remain the leading technique employed by the respondents followed by the use of vacant lot (19.00%) and multi-purpose pavement (17.20%). For harvests requiring grading or classification prior to selling, majority of the respondents (99.48%) report to having no tool for such purpose. Grading and classification are instead accomplished mainly through visual inspection (100.0%). In the case of products needing refrigeration, styrofoam packaging (93.88%) is the most used technique for freezing.

On the subject of agri-fishery trading, respondents most often use prices identified by the traders or buyers (57.5%) in setting the prices for their harvests or products followed by word of mouth (31.0%), while other respondents (10.5%) do not sell their produced (for own consumption only). Majority (97.5%) do not use the internet to determine the prevailing market prices for their agricultural produce and (97%) also do not use the internet to offer to sell their harvests or products.

Around 50.56% of the respondents reported that they transport their harvests or products from their farms to the markets or other places where they could be sold but other buyer or trader pick-up their harvest at the site (49.44%). In such cases, tricycle (39.78%) and

motorcycle (34.81%) constitute the most widely used transportation option by the respondents for moving their produce from the farm to the market.

Crop Farming

Around 74.25% of the respondents from the province reported to having earned part of their livelihood from crop farming. Of these, 74.20% are self-reported organic farming practitioners, and 97.70% consider themselves farmers while 2.30% consider themselves as farm laborers. An estimated 44.10% are agrarian reform beneficiaries, while 47.20% are non-beneficiaries. The leading types of work undertaken by the respondents in the farm include land preparation (93.98%), harvesting (61.20%), planting and transplanting (48.16%) and cultivation (41.81%).

In terms of tenure status of farmlands, majority of the respondents (50.80%) are owners, while 43.80% are tenants and 4.00% are leaseholders. For the non-landowners, 68.20% of land farmed are owned by immediate family member while 31.80% are owned by a non-immediate family member. Most of the respondents (45.5%) reported to farming lands not covered by agrarian reform and 44.50% are covered by agrarian reform.

The average land area being farmed by the respondents is 1.37 hectares, most of which (52.17%) are rain-fed lowland. Around 28.76% of these lands are irrigated, while around 19.06% are upland rain-fed. Majority of the irrigation is provided by the National Irrigation Administration (67.44%), Other respondents depend on river/sapa (13.95%), water pump (8.14%) and private individual/group (5.81%)

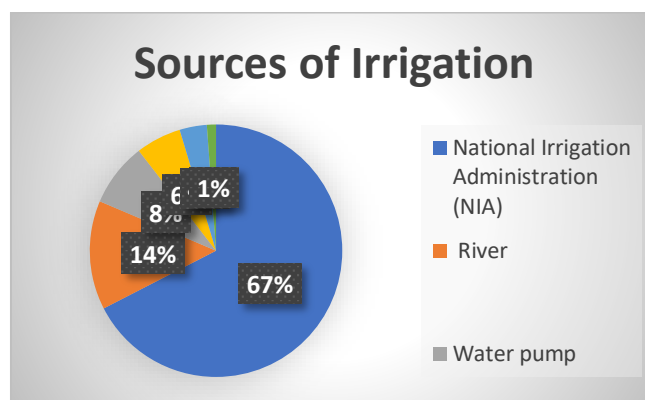


Figure 4. Sources of Irrigation

Rice (94.31%) was the crop grown by most of the respondents in the province in the last 12 months. The average area of land used for rice was 2.72 hectares. The usual seed type used for the said crop is native/traditional (78.60%), while the usual seed source is from government (36.88%), purchased from commercial outlet (28.72%), and combined government and commercial (17.73%). On the other hand, the usual fertilizer type used is

inorganic (94.35%), while the usual fertilizer source are the commercial outlets (86.0%). Meanwhile, the usual pesticide type is inorganic (97.30%), while the usual pesticide source is the commercial outlet (96.82%).

In terms of site preparation, most of the respondents use farm animals (41.13%); while others use hand tractors (31.10%) and garden tools (19.06%). In cases wherein machineries or equipment are used for site preparation, an average of 9 days was reported in order to prepare an average plot size of 1.38 hectares for farming. Majority of the functions was land clearing (93.31%) while some perform plowing (3.68%), harrowing (1.34%), land leveling (1.34%), and excavating (0.33%) for the farm needs of the respondents. Meanwhile, around 16.4%% of the respondents report to owning the equipment or machinery used for site preparation.

On the subject of preparation and nutrient management, *sabog tanim* (94.65%) was found to be the most popular method of planting/replanting and transplanting among the respondents. Concerning the use of fertilizers for nutrient management, the survey also revealed that knowledge from past experience (92.30%) was the cited guiding principle by the majority of the respondents in the use of fertilizers. Hand-held or portable sprayers/applicators (89.00%), meanwhile, were the preferred tool, equipment, or technology in applying fertilizers by the majority. Few of the respondents (9.40%) claimed to use organic fertilizers. The average estimated percentage of organic fertilizer use versus commercial and/or synthetic fertilizers is at 40%. For those who use organic fertilizers, around 57.14% prepare their own supply of the same. For those who did not, the huge time consumed in preparation (73.43%) was cited as the leading reason for the non-adoption of organic fertilizers followed by the lack of knowledge or information on how to make (15.87%).

In terms of pesticide use, knowledge from past experience (90.60%) was the most cited guiding principle by the respondents. Around 4.30% of the respondents claim to use botanical pesticides, with the application of this type of pesticide estimated at 73.84% of the time versus commercial and/or synthetic fertilizers. Those who did not use botanical pesticides cited time consuming to prepare (70.63%) as one the top causes for the non-adoption of the aforementioned type of pesticide.

Fruit Farming

Around 7.00% of the respondents from the province reported to having earned part of their livelihood from fruit farming. Of these, 7.00% are self-reported organic farming practitioners, and they all consider themselves farmers. An estimated 39.29% have at least one member of the household or are themselves agrarian reform beneficiaries, while 50% are non-beneficiaries. The leading types of work undertaken by the respondents in the farm include land preparation (71.43%) and planting/transplanting (64.29%).

On the subject of tenure status of farmlands, most of the respondents (57.14%) are owners, while 32.14% are tenants. On the subject of land ownership, lands farmed by the respondents were owned by an immediate family member (57.14%) and non-immediate family member (42.86%). Respondents (46.43%) reported to farming lands covered by agrarian reform.

The average land area being farmed by the respondents is 4.7 hectares. Around 75.00% of these lands are upland rain-fed, while 25.00% are lowland rain-fed. In terms of practices used to induce flowering in fruit-bearing trees, regular pruning (50.00%) was cited by the respondents as the most preferred methodology.

Coconut (89.00%) and banana (60.00%) were the most grown fruit trees in the Province in the last 12 months. The average area of land used for coconut was around 1.18 hectares and the average area of land used for banana around 17 hectares. The usual seed type used for the said fruit trees is native/traditional (93%) while the usual seed source of coconut is own supply while for the banana it was purchased from the commercial outlet. On the other hand, the usual fertilizer type used for coconut and banana are both inorganic, while the usual fertilizer source for coconut is from the commercial outlets. Meanwhile, the usual pesticide type for coconut is inorganic/commercial, while the usual pesticides source is the commercial outlet. Further, banana farmers are not using pesticides on the said fruit trees.

On the subject of site preparation, majority (85.71%) of the respondents use garden tools (rake, shovel, and trowel) while 14.29% use hand tractors.

In terms of nutrient management, knowledge from past experience (92.86%) was the most cited guiding principle by the respondents in the use of fertilizers. Most of the respondents (75.00%) do not use tool, equipment, or technology in applying fertilizers

Majority of the respondents (92.86%) claimed that they are not using organic fertilizers. The average estimated percentage of organic fertilizer use versus commercial and/or synthetic fertilizers is at 25.00%. For those who use organic fertilizers, around 100% prepare their own supply of the same. For those who did not, the lack of knowledge or information on how to make (23.00%) and the huge time consumed in preparation (76.92%) were cited as the reasons for the non-adoption of organic fertilizers.

In terms of pesticide use, knowledge from past experience (89.29%) was the most cited guiding principle by the respondents. Around 3.57% of the respondents claimed to use botanical pesticides, with 100% application of this type of pesticide. Those who did not use botanical pesticides cited time consuming to prepare (85.19%) as one of the top causes for the non-adoption of the aforementioned type of pesticide.

Livestock and Poultry Raising

Around 7.50% of the respondents from the province reported to having earned part of their livelihood from livestock and poultry raising. Pig (70.00%) and chicken (36.67%) constitute the majority of the animals raised or currently being raised in the province in the past 12 months. Intensive livestock farming (70.00%) was found to be the most preferred livestock/poultry farming type, followed by semi-intensive livestock farming (26.70%). Open type with fence (33.30%) and low-cost housing (26.67%) or the use of slatted floor, bamboo and wood, cogon/nipa roofing) was the most widely-adopted animal housing reported by the respondents. Bulugan system (63.3%), on the other hand, was the most preferred method for livestock/poultry propagation.

The survey also revealed that the respondents who have earned part of their livelihood from livestock and poultry raising have drainage systems (60.00%) in their farms, have feeding racks 46.67%, have lighting systems (10.00%) and have breeding areas (6.70%) and septic tanks (6.70%).

Most government services, meanwhile, was received by the respondents by personal visit to the government offices concerned (83.30%), followed by visits made by government agencies to the farm (16.67%).

Fishing Activities

Around 75.00% of the respondents from the Province reported to having earned part of their livelihood from fishing. Fish capture (84.31%) constitutes the most dominant type of fishing activity in the province, followed by aquaculture (13.73%). Most of the respondents (63.00%) engage in fishing more than once a week, while around 29.00% of the respondents engage in fishing everyday. The dominant fishing type is municipal waters (81.00%), followed by marine fisheries (18.00%) and inland or freshwater fisheries (1.00%) and. Most of the respondents reported to have fished mostly in the different barangays near them.

Around 76.74% of the respondents reported to be the owners of the fishing boat, while around 20.93% are fishers (i.e., not owner, captain, or master of fishing boat). The modal length of the fishing boat is less than 25 meters (86.05%). Around 18.18% of the respondents received their fishing boats from the government. During the conduct of fishing activities, an average of 3 persons accompanies the respondents in the fishing boat. Motorized boats (60.71%) were reported as the most used equipment in fisheries activities, followed by manually paddled boats (39.29%).

The modal type of fish caught by fisherfolk in the province is bangus, hasa-hasa, shrimp, tulingan, bisugo, bulinao, and tamban. The average weight (in tons) of fish caught in each single fishing activity is 90 kilos or 0.09 tons. Meanwhile, majority of the respondents (94.0%) do not engage in the production of seaweeds in the past 12 months. Pollution in production areas (83.3%) was cited as the foremost challenge in seaweed production. Marine products from the river/open sea (84.62%) and pellet feeds (15.38%) was the most used option for feeding fingerlings or stocks. Lastly, respondents cited the ponds (79.92%) and use of fishnets (23.08%) as the most used equipment in aqua farming activities.

Conclusions

Despite DA's efforts, there are still farmers and fisherfolks who are not enrolled in RSBSA, do not own land, and availed fewer goods and services from the government. Traditional methods/devices are still mainly practiced in planting, nutrient management, harvesting, post-harvesting, freezing, and grading. While machinery/equipment is utilized for land preparation. The respondents mostly rely on past experience in the case of fertilizers and pesticide use.

References

- United Nations General Assembly. (2015).** *Transforming our world: The 2030 agenda for sustainable development* (A/RES/70/01). https://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E
- National Economic and Development Authority. (2016).** *AmBisyon Natin 2040: A long-term vision for the Philippines*. NEDA. <http://2040.neda.gov.ph/wp-content/uploads/2016/04/A-Long-Term-Vision-for-thePhilippines.pdf>
- Philippine Statistics Authority. (2020).** *2020 Selected statistics on agriculture*. PSA.
- Philippine Statistics Authority. (2020).** *Farmers, fisherfolks, individuals residing in rural areas and children posted the highest poverty incidences among the basic sectors in 2018*. <https://psa.gov.ph/content/farmers-fisherfolksindividuals-residing-rural-areas-and-children-posted-highest-poverty>