

## EXECUTIVE SUMMARY

This report presents the results of an impact evaluation study of the Agri-Pinoy Livestock Program (A-PLP) that was implemented by the Department of Agriculture Regional Office VIII (DA-RFO8) in Samar Island. The impact evaluation was done to achieve the following objectives: (1) examine how A-PLP projects have: (a) ensured food security, (b) affected livestock farmers'/households' income and productivity, (c) improved livestock and poultry production, (d) supported market development and competitiveness of livestock farmers, and (e) capacitated DA-RFO8 in the delivery of market-oriented and productivity-enhancing services; (2) assess the attainment of the program development objectives, results components and major final outputs; (3) determine the economic, social and environmental impact of the A-PLP, including production and market development of the livestock industry; (4) appraise the status of adoption and/or modification of delivery services as well as implementation covenants by DA-RFO8; and (5) examine the effectiveness of DA-RFO8 in undertaking joint investments, market-oriented infrastructure and upgraded livestock technology projects with LGUs and private companies.

Mapping of the project inputs to project benefits was done following the impact assessment framework of Davis *et al.* (2008). Both primary and secondary data were utilized. Primary data were collected through focus group discussions with project implementers, key informant interviews, site visitation/ocular inspection, and in-depth survey of both project beneficiaries and non-beneficiaries across provinces using pretested interview schedule. The evaluation dealt primarily with the four major components of the A-PLP, namely: Unified National Artificial Insemination Program (UNAIP), Male Breeder Loan Program (MBLP), Samar Island Small Ruminant Enterprise Development (SAIS RED) Project, and Animal Infusion and Restocking Program (AIRP). The non-beneficiaries served as the control/counterfactual group. A total of 132 UNAIP beneficiaries and 120 non-beneficiaries (carabao raisers) were included in the survey. From these respondents, 50 randomly selected samples from each group participated in providing input-output data and other information *before* UNAIP implementation. For SAIS RED, a total of 117 goat raisers were randomly surveyed (58 beneficiaries and 59 non-beneficiaries). In addition, 21 MBLP and 50 AIRP beneficiaries were surveyed.

Innovative quantitative and qualitative approaches were employed in estimating the impact of the A-PLP in Samar Island. The quantitative techniques included propensity score matching (PSM), difference-in-difference (DID) method and benefit-cost analysis (BCA). On the other hand, analysis of most significant change (MSC) stories was employed to identify qualitative indicators of project outcome/impact.

The A-PLP engaged in activities aimed at developing the livestock industry in Samar Island. These activities involved achieving two Major Final Outputs (MFOs) of providing: (1) technical support services, and (2) agricultural equipment and facilities. To attain these outputs, the A-PLP implemented the following services and interventions:

(a) production support services, (b) marketing development services, (c) extension support, education and training services (ESETS), (d) research and development, (e) regulatory services, (f) information support services, and (g) policy formulation, planning and advocacy services. The DA-RFO8 invested about PhP117 million (nominal value) in implementing the various A-PLP strategies for Samar Island from 2011–2016. This is equivalent to PhP127 million and PhP160 million in real and present values, respectively. The bulk of investment (more than 92%) was incurred on technical support services, about half of which was devoted to production support services.

The production support services included operation of two Livestock Satellite Stations, genetic improvement program, pasture development, and animal health program. The genetic improvement program aimed to improve the production and reproduction potential of local animals. This was done by the introduction of superior quality genetic materials through the UNAIP and MBLP. Meanwhile, the AIRP was implemented by the A-PLP to increase livestock inventory in Samar Island. Two schemes were involved: (1) regular program that usually consisted of direct distribution of animals by DA-RFO8 to the recipients and (2) fund transfer for LGUs to procure the animals for distribution to identified beneficiaries. The A-PLP also introduced and distributed improved pasture and forage materials. Moreover, the A-PLP aimed to prevent and control animal diseases/parasites to assure attainment of improved animal production and reproduction performance by providing drugs and biologics, animal disease surveillance and disease diagnosis.

Another strategy employed in the implementation of the A-PLP was the provision of Marketing Development Services in the form of: (a) market assessment, survey and matching; (b) upgrading of livestock auction markets; (c) agribusiness investment forum; (d) seminar on livestock production/slaughter house operation; and, (e) provision of digital weighing scale. It also supported capability building for Agricultural Extension Workers (AEWs), distributed information, education and communication (IEC) materials and provided incentives to devolved AEWs.

The research and development initiative of the A-PLP in Samar Island centered on the SAIS RED project. Aside from capacity-building activities, the project introduced a basket of technology options on goat production to farmer-partners. These included housing, stall feeding, use of improved forage/pasture, urea-molasses mineral block (UMMB)/salt/concentrate supplementation, strategic deworming, and upgrading. It also facilitated the formation of farmer-partners into goat raisers' organizations and training on the operation and management of goat and allied enterprises.

Through its regulatory services, the A-PLP provided registration, licensing and accreditation as well as monitoring of groups and individuals engaged in the manufacture, distribution and sale of veterinary drugs, feeds, livestock and poultry products. In addition, it provided information support services that involved the installation and maintenance of two Livestock Information Systems (LIS): (1) Philippine Animal Health Information System (Phil-AHIS) and (2) UNAIP e-Reporting System.

Moreover, through the A-PLP, the DA-RFO8 engaged in Quick Response to Emergencies and consultation with stakeholders.

The A-PLP supported the animal multiplier facilities established in various LGUs across Samar Island by infusing and restocking these with animals. Aside from animal infusion and restocking into multiplier facilities, the A-PLP also provided some LGUs with equipment needed in the implementation of some aspects of the program.

The A-PLP has addressed the issue of ensuring food security by improving the productivity of existing livestock that contributed to ensuring the availability, accessibility and affordability of livestock products. It has also increased the farm income of livestock raisers, improved farmers' knowledge on livestock raising, and contributed to improved efficiency of feed utilization thereby reducing input waste and environmental pollutants. Moreover, the program has provided learning opportunities to the DA-RFO8 in the delivery of market-oriented and productivity enhancing services. Furthermore, it allowed the DA-RFO8 to demonstrate considerable effectiveness in undertaking joint investments and upgraded livestock technology projects with LGUs and private companies.

Table 1 summarizes the major findings on program outcomes and impacts, conclusion and recommendations to sustain the gains and benefits from the A-PLP. Agencies and entities that are concerned with the recommendations are also cited.

Table 1. Major findings, conclusions and recommendations based on the impact evaluation of A-PLP in Samar Island

Finding	Conclusion	Recommendation	Concerned Agency
<p>The A-PLP provided technical support services and agricultural equipment and facilities in order to support the development of the livestock industry in Samar Island. One of its main technical support services was production support services.</p> <p>The production services primarily engaged in genetic improvement and production farm development. Genetic improvement activities involved two practical methods for improving production potential among livestock, namely through: (1) natural breeding through the Male Breeder Loan Program (MBLP), and (2) artificial breeding through the Unified Artificial Insemination Program (UNAIP).</p> <p>The production farm development through the Livestock Production Centers (LPCs) in Salcedo and Gandara enabled availability of vital inputs not only for the animal infusion and pasture development program, but also for the male breeder loan and artificial insemination programs.</p>	<p>The production support services has addressed the issue of food security by improving productivity of existing livestock through genetic improvement and production farm development activities.</p> <p>The LPCs have served to assure sustained availability of quality breeder animals and AI skills (through the farm workers taking the lead in AI services provision and capability building of local technicians). The production farms have also served as vital sources of planting materials for pasture development, which was undertaken to assure availability of adequate feed to support increased animal number and production potential.</p>	<p>Sustain the operation of the LPCs and provide adequate support (financial and manpower) to the reactivation of LPCs in Samar Island.</p>	<p>Dept. of Agriculture RFO8</p> <p>Provincial Local Government Units (PLGUs)</p> <p>Provincial Agriculture Offices</p> <p>Provincial Veterinary Offices</p>

<p>The UNAIP demonstrated benefits to the carabao raisers. Successful artificial AI produced better quality offspring (better growth and milk production), resulting to significantly higher net income by PhP11,000 per carabao.</p> <p>The increase in income and productivity due to AI was supported by the most significant change stories of the beneficiaries.</p> <p>Success of AI services was positively and significantly influenced by education of carabao raisers, use of natural heat, process of insemination, and follow up visits by AI technicians.</p> <p>However, there was low participation rate of LGUs in the UNAIP (36% of total number of LGUs) that resulted to a low proportion of the carabao population being inseminated (2.7%) and low success rate (7% of inseminated animals).</p> <p>Despite this, the program was found to be a profitable investment by the APLP in Samar Island.</p> <p>The major constraints to sustained adoption of AI were heat detection as well as availability of AI technician and semen.</p>	<p>AI in carabaos demonstrated significant positive impact on farmers' farm income and productivity. Such impact was also recognized by the carabao raisers as a significant change brought about by the project. AI enabled increase in productivity of individual carabaos. This indicates that the AI activity improved efficiency of farm and household resource utilization. Despite the low adoption and success rates of AI due to inadequate participation of stakeholders, the UNAIP has been a profitable investment in Samar Island.</p>	<p>Scale up adoption and implementation of AI services by involving more stakeholder raisers, LGUs and agencies (by expanding the reach of advocacy activities and other strategies like clustering of adjacent localities).</p> <p>Improve and assure proper implementation of protocols for availment of AI services (e.g. follow-up visits).</p> <p>Provide support for training and mentoring of more Village-Based AI Technicians (VBAIT).</p>	<p>Dept. of Agriculture RFO8</p> <p>Local Government Units (LGUs)</p> <ul style="list-style-type: none"> <li>- Provincial</li> <li>- City/Municipal</li> <li>- Barangay</li> </ul> <p>Agriculture and Veterinary Service Offices</p> <ul style="list-style-type: none"> <li>- Provincial</li> <li>- City/Municipal</li> </ul> <p>Philippine Carabao Center (PCC)</p> <p>National Dairy Authority (NDA)</p>
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<p>Another program that aimed to support genetic improvement of livestock was the MBLP. However, compliance of the procedure in the availment of male breeder loan was very low.</p> <p>Only a third of the 21 male breeder animals were able to serve female animals. Most of the animals were either sold, slaughtered or died.</p>	<p>The MBLP was not able to demonstrate considerable impact due to some implementation issues.</p>	<p>Review and improve the procedure in identifying the right beneficiaries and ensuring adequate understanding of roles/responsibilities by stakeholders of the program.</p> <p>Implement regular monitoring and provide necessary followup support to MBLP beneficiaries.</p>	<p>Dept. of Agriculture RFO8</p> <p>Local Government Units (LGUs)</p> <ul style="list-style-type: none"> <li>- Provincial</li> <li>- City/Municipal</li> <li>- Barangay</li> </ul> <p>Agriculture and Veterinary Service Offices</p> <ul style="list-style-type: none"> <li>- Provincial</li> <li>- City/Municipal</li> </ul>
<p>The A-PLP's research and development activity in Samar Island activity focused on the Samar Island Rural Enterprise Development (SAIS RED) project.</p> <p>The project significantly increased by four heads the number of animals raised by the goat raisers.</p> <p>Emergence of positive outcomes in terms of adoption of new goat raising technologies, production of better-quality offspring, increased volume of milk produced from crossbred goats, emergence of goat enterprises, and improvement in some personal entrepreneurial competencies (PEC) of beneficiaries.</p> <p>Less than half (44%) of the SAIS RED organizations monitored were active. The inactivity of most organizations was due to</p>	<p>The SAIS RED R&amp;D activity has been a modality that helped address food security issues by building up entrepreneurial capability among goat raisers. The project has enabled goat raisers to increase the number of animals raised in their farms. The project has started to demonstrate improvement in productivity and competitiveness of livestock farmers in Samar Island. Moreover, it has demonstrated improvement in capability of goat raisers both in terms of production and entrepreneurial skills.</p>	<p>Revive/capacitate the organizations as they can provide support in enhancing the emergence of goat enterprises and further developing the PEC of goat raisers.</p> <p>Involve more stakeholder raisers, LGUs and other agencies.</p>	<p>Dept. of Agriculture RFO8</p> <p>Local Government Units (LGUs)</p> <ul style="list-style-type: none"> <li>- Provincial</li> <li>- City/Municipal</li> <li>- Barangay</li> </ul> <p>Agriculture and Veterinary Service Offices</p> <ul style="list-style-type: none"> <li>- Provincial</li> <li>- City/Municipal</li> </ul> <p>National Dairy Authority</p>

<p>absence of sustaining activities after project implementation.</p>			
<p>Aside from animal infusion and restocking program (AIRP) of multiplier farms, the A-PLP also engaged in animal infusion to livestock farmers affected by Super Typhoon Haiyan. The livestock species infused included carabao, cattle, goat, chicken, and swine.</p> <p>Implementation of the program was delayed due to procurement issues.</p> <p>Implementation issues (e.g. beneficiary selection and preparation) affected performance of some infused animals.</p> <p>Emergence of positive outcomes (e. g. 181 beneficiaries of re-dispersal of swine, significantly higher income by PhP11,000 per household generated from swine production). This increase in income was also supported by the most significant change stories of the beneficiaries.</p>	<p>The AIRP has likewise addressed food security by providing replacement animals after the massive animal losses brought about by a major calamity that affected Samar island (Typhoon Haiyan). This activity of the A-PLP has enabled significant increase in the net income from swine production of swine raisers. Such increased income was considered a significant change experienced by the swine raisers.</p>	<p>Evolve policies to facilitate procurement of inputs (mainly animals) and assure timely as well as proper implementation of AIRPs.</p> <p>Revive/reactivate and provide adequate support to the LPCs in Samar Island and Eastern Visayas.</p>	<p>Dept. of Agriculture RFO8</p> <p>Local Government Units (LGUs)</p> <ul style="list-style-type: none"> <li>- Provincial</li> <li>- City/Municipal</li> <li>- Barangay</li> </ul> <p>Agriculture and Veterinary Service Offices</p> <ul style="list-style-type: none"> <li>- Provincial</li> <li>- City/Municipal</li> </ul>

<p>Only a limited number of market development services in Samar Island were implemented because the scale of livestock production in Samar Island was considered inadequate to warrant successful market development.</p> <p>In terms of market-oriented infrastructure, the DA-RFO8 has provided LGUs with three digital weighing scale. However, the agency was not able to evaluate and influence the LGUs on matters related to ensuring functionality of all the units after provision. Hence, only one digital weighing scale was functional. The other was functional for only a year and was damaged during the renovation of the slaughter house. The remaining unit was unutilized.</p>	<p>The A-PLP has provided limited activities to support market development and competitiveness of livestock farmers in Samar Island. The main reason was that the scale of livestock production in the island was still low (almost totally backyard or subsistence). In this case, the most appropriate intervention was to first increase the scale of production, coupled with a few relevant market development activities.</p> <p>The A-PLP has provided market-oriented infrastructure in terms of digital weighing scales to help raisers obtain a fair market value of their animals. However, inadequacy of support mechanisms for the proper utilization of the weighing scales was experienced, hence effectiveness of said infrastructure has not been fully demonstrated. Addressing these would provide considerable impact to this intervention, and serve as preparation/transition point for the increased scale in production.</p>	<p>Evolve appropriate services and activities that support market development opportunities for smaller scale production systems and enhance competitiveness of livestock farmers in Samar Island.</p> <p>Immediate repair of the digital weighing scale in Dolores, Eastern Samar and installation of the unit in Calbayog City.</p>	<p>Dept. of Agriculture RFO8</p> <p>Local Government Units (LGUs)</p> <ul style="list-style-type: none"> <li>- Provincial</li> <li>- City/Municipal</li> </ul> <p>Agriculture and Veterinary Service Offices</p> <ul style="list-style-type: none"> <li>- Provincial</li> <li>-City/Municipal</li> </ul> <p>Department of Trade and Industry (DTI)</p>
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<p>The animal health program of A-PLP was successful in maintaining the FMD-free status in the Region, in general and in Samar Island, in particular. However, it was not able to demonstrate its impact on mortality and morbidity rates due to other diseases.</p>	<p>The animal health program needs to be more responsive to emerging issues and problems.</p>	<p>Increase involvement of stakeholders to strengthen animal health monitoring system, enabling timely identification of disease/parasite occurrence and appropriate animal health interventions.</p> <p>Strengthen advocacy on the prevention and control of common economically important diseases like Foot and Mouth Disease (FMD) and Hemorrhagic septicemia (HemoSep).</p>	<p>Dept. of Agriculture RFO8</p> <p>Local Government Units (LGUs)</p> <ul style="list-style-type: none"> <li>- Provincial</li> <li>- City/Municipal</li> <li>- Barangay</li> </ul> <p>Agriculture and Veterinary Service Offices</p> <ul style="list-style-type: none"> <li>- Provincial</li> <li>- City/Municipal</li> </ul>
<p>The A-PLP provided capability building activities to the Agricultural Extension Workers (AEWs). The AEWs considered the trainings provided as effective and adequate; however, the incentives provided were considered effective but inadequate.</p>	<p>Trainings and incentives for AEWs provided by A-PLP were effective; however, the AEWs felt that the incentives were inadequate.</p>	<p>Sustain provision of training/capability building for AEWs.</p> <p>Improve incentive system for AEWs.</p>	<p>Dept. of Agriculture RFO8</p> <p>Local Government Units (LGUs)</p> <ul style="list-style-type: none"> <li>- Provincial</li> <li>- City/Municipal</li> </ul> <p>Agriculture and Veterinary Service Offices</p> <ul style="list-style-type: none"> <li>- Provincial</li> <li>- City/Municipal</li> </ul>

<p>The implementation by the DARFO8 of A-PLP activities was facilitated by partnership with Local Government Units (LGUs) and private entities. The implementation covenant was covered by a Memorandum of Agreement (MOA) between the DA-RFO8 and concerned LGUs/organizations.</p> <p>The DA-RFO8 has generally performed its roles and responsibilities. However, it was found weak in monitoring and evaluation of project activities. This was attributed to lack of manpower considering the scope of coverage and distance of project sites.</p> <p>Aside from the issue on adequate and timely project monitoring, selection of beneficiaries by the LGUs and assuring commitment of stakeholders were critical.</p>	<p>The DA-RFO8 has generally performed its roles and responsibilities in terms of adoption of delivery services and implementation covenants. However, improvement is needed in the monitoring and evaluation of most collaborative undertakings with LGUs. Adequate manpower and skills are required to cater to the scope of coverage and area covered by project sites.</p>	<p>Invest on manpower and other resources needed to assure adequate monitoring and evaluation of project activities.</p>	<p>Dept. of Agriculture RFO8</p>
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<p>The main partners of the DA-RFO8 in implementing the A-PLP were the LGUs at the provincial, city or municipal level. Its involvement with agriculture and veterinary offices has allowed the DA-RFO8 to acquire considerable skill in partnering with these entities.</p> <p>The sustainability of partnerships with LGUs especially with the implementation of long-term projects has been challenged when a different set of LGU officials get elected.</p> <p>Although quite limited, the A-PLP through its R&amp;D activity provided the DA-RFO8 to engage with private entities. Said partnership was effective.</p>	<p>The DA-RFO8 has also demonstrated considerable effectiveness in undertaking joint investments and upgraded livestock technology projects with LGUs and private entities during the A-PLP. Given the diverse environment and circumstances among LGUs and private companies, most of the undertakings still have room for improvement. A major need is to identify and implement undertakings that have relevance at the local, provincial, regional and national levels.</p>	<p>Invest on manpower and other resources needed to assure sustainability of partnerships with LGUs.</p>	<p>Dept. of Agriculture RFO8</p>
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<p>Most of the technologies and activities implemented by the APLP have demonstrated benefits to adopters. However, the accomplishment in terms of adoption rate in relation to the whole Island has considerable potential to increase. Attainment of program development objectives, results components and major final outputs are still modest in relation to the whole Samar Island.</p>	<p>There is considerable potential and need for DA-RFO8 to scaleup/increase the adoption rate of its livestock technologies and activities.</p>	<p>Increase capacity to assume a coordinative role in scaling-up beneficial technologies and activities.</p>	<p>Dept. of Agriculture RFO8</p>
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