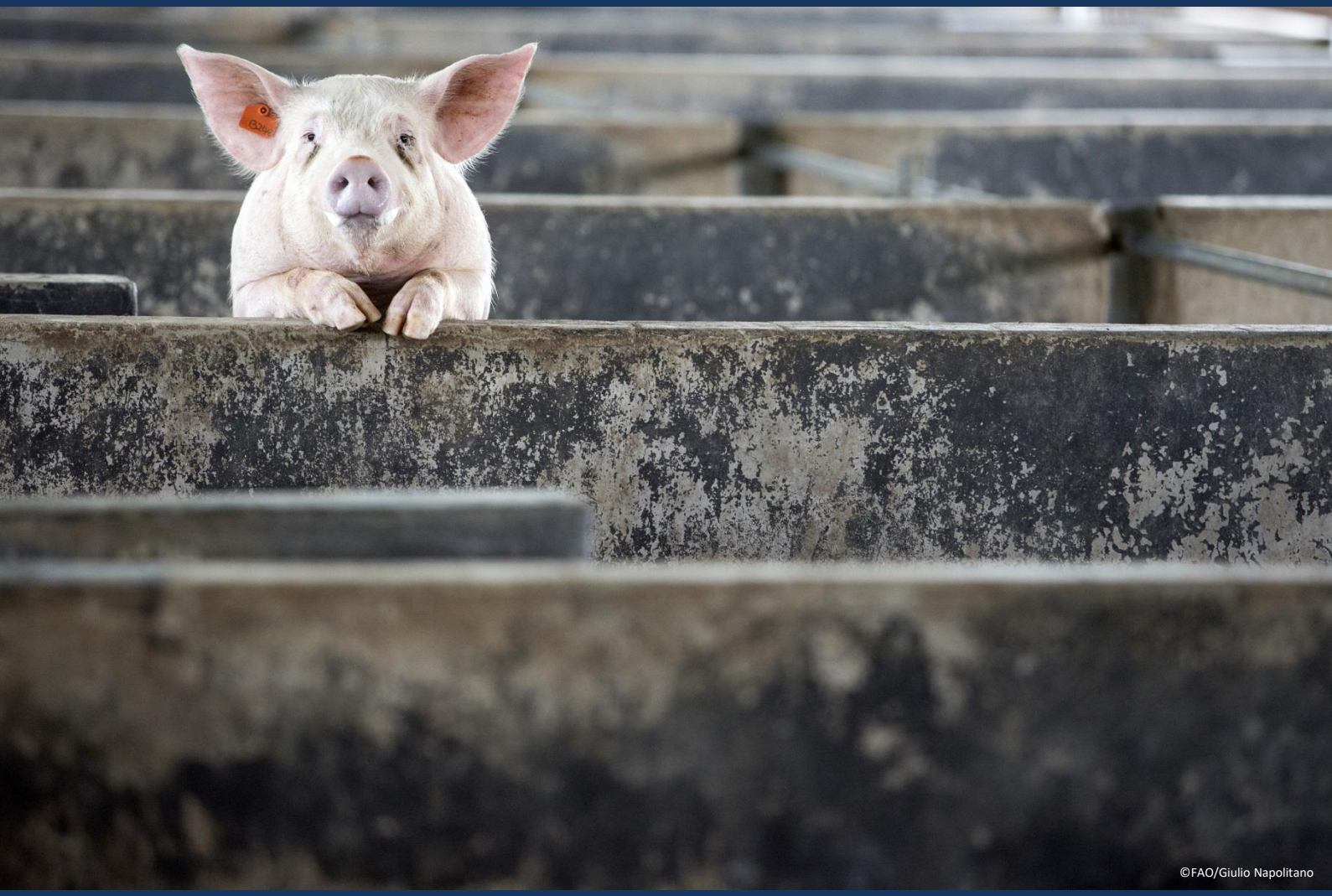
Food and Agriculture Organization of the United Nations



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SUPPORT TO IMPROVED PIG BREEDING SYSTEM

April 2019

SDGs:	
Countries:	Democratic People's Republic of Korea
Project Codes:	TCP/DRK/3604
FAO Contribution:	USD 330 000
Duration:	9 November 2016 – 31 December 2018
Contact Info:	FAO Representation in Democratic People's Republic of Korea FAO-KP@fao.org and FAO-CN@fao.org

Implementing Partners

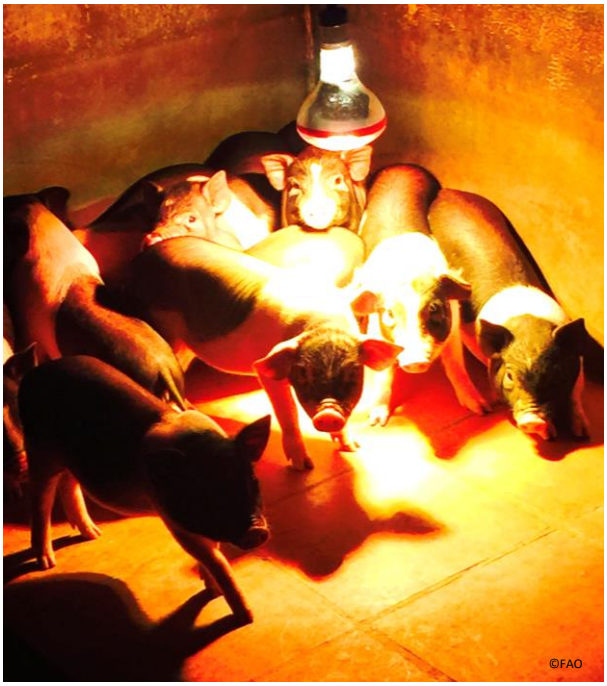
Ministry of Agriculture (MoA), Academy of Agriculture Science (AAS).

Beneficiaries

Total number of direct beneficiary farmers from all the eight cooperative farms was 19 704 including 10 020 women. Total beneficiaries were 964 700 persons in eight counties of North and South Hwanghae provinces.

Country Programming Framework

A1: Increased food production, Outcome A3: Increased production of unprocessed foodstuff with higher nutritional value.



BACKGROUND

In recent years, with the emergence of food security, livelihood security, water scarcity and natural resource conservation and environmental protection as major issues worldwide, the Government of the Democratic People's Republic of Korea has placed increased emphasis on the development of the livestock sector to strengthen national food and nutrition security. Livestock in the country consists mainly of draught cattle, pigs, sheep, goats, rabbits, chickens, ducks and geese. Among these, pigs are an important source of meat production, as they convert a wide variety of feedstuff, grains, forages and household leftovers into valuable nutritious meat. Pigs are also prolific. A sow can be bred at as early as eight or nine months of age and can farrow twice a year, producing from nine to 13 piglets each time. Given these advantages, pig production can be established in both smallholder farming and large-scale commercial production. However, scientific management practices to reduce pre-weaning piglet mortality and to increase the profitability of pig farms are urgently required. Besides the physical and material constraints that currently exist, the breeding and multiplication of superior quality pigs are also impeded by knowledge and technological gaps.

This project addressed the major causes of low productivity in pig production through the provision of improved breeds with high meat productivity, production inputs and technical training to selected eight cooperative farms in North and South Hwanghae provinces.

IMPACT

The project benefited almost one million people in eight counties of North and South Hwanghae provinces, strengthening food and nutrition security by providing increased amounts of meat through pig farming. In Zunghwa County, North Hwanghae, Samsong farm had little knowledge of modern techniques of pig feeding and management, and of improved pigs. The quality and quantity of the meat produced were insufficient for the farming community (729 men and 770 women). Thanks to the project, the farm now has advanced-design pig houses and quarantine houses for breeding improved breed pigs.

Achievement of results

The direct beneficiaries of the project were 19 704 farmers (51.13 percent women) at eight cooperative farms in four countries, respectively, of two provinces, North Hwanghae and South Hwanghae. The total beneficiaries were 964 700 persons in the eight counties and included farmers, the local community, technicians and officers from government agencies.

The project produced a bilingual technical manual in Korean and English languages, entitled "Technical Handbook on Pig Production" in 2017. Following selection through a participatory approach by AAS, a total of 418 farmers and officers received training in pig multiplication, breed maintenance, pig production and husbandry procedures, as follows. National-level training in pig multiplication and breed maintenance was conducted in all eight cooperative farms for 206 farmers and officers. Training in improved pig production management and husbandry procedures was conducted in all eight cooperative farms for 208 farmers and officers. A study tour to Thailand for 15 days to four government officials was also organized.

Pig houses of advanced design were built to rear breeding stock and a facility constructed to keep sick animals in isolation. The building material for the construction of the pig houses was provided by the project and shared equally among all eight farms. Each farm was provided with 424 tonnes of cement, 12 tonnes of steel bars and 120 m^3 of timber. The pig breeding and fattening houses were equipped with electricity, lighting, water supply, drainage and organic waste disposal.

The project provided each cooperative farm with 144 improved breed piglets, to be raised in advanced-design pig houses. The sows farrowed close to three times a year, producing around nine to 13 piglets per litter. The weight of each animal was between 50 and 60 kg. The project supported the multiplication of 4 599 pigs in 2018. Pork production in the eight project farms was 111.5 tonnes in 2017 and 153.8 tonnes in 2018, an increase of 37.94 percent. The pork supplied to farmers increased by 37.8 percent, from 5.66 kg to 7.80 kg per person per annum.

Implementation of work plan

The indicators were met and the activities mentioned in the Project Document successfully implemented. Participatory rapid rural assessment was utilized to ensure the full participation of all relevant project stakeholders at field level in all processes from planning to project implementation. Eight core groups were formed to take responsibility of on-farm pig breeding and husbandry activities. Intensive livestock production and animal health systems were introduced and developed. Research institutes such as the Central Veterinary Station, the Veterinary Research Institute and the Animal Husbandry Research Institute, AAS, helped to develop the farm-level technical and managerial strength of farmers with regard to designing pig houses, and approving schemes and pedigree reports.

MoA was responsible for project implementation, which involved researchers and technical staff from central and local institutions of veterinary and anti-epizootics, the Institute of Zootechnics of the Academy of Agriculture and other relevant institutions for technical and managerial support.

Follow-up for government attention

The Government should review the improved pig breeding production introduced under the project and share the technical information among all stakeholders. It should also investigate possible ways to expand superior variety pig farming into other regions in order to improve national food and nutritional security.

Further technology transfer to all level of stakeholders should place an increased emphasis on pig rearing-related infrastructure.

SUSTAINABILITY

1. Capacity development

A total of 418 farmers and technicians, institutes' experts, and senior officers of MoA were trained in improved pig breeding through national-level on-site training and an overseas study tour. The trained farmers and those who manage the eight beneficiary farms will disseminate the skills acquired to other regions through the expansion of improved pig production farms. Capacity development centred on strengthening the capability of cooperative farms to increase the productivity of pig farming by providing breeding stock, feed, medication, vitamins, by building housing for pig raising and by training farmers in improved methods of pig multiplication. The project outcome will be followed and replicated within the policy framework of MoA for improving livestock production and productivity.

2. Gender equality

Of the direct beneficiaries of the project, females accounted for 51.13 percent, underlying the attention given to gender equity. Women farmers were encouraged to participate in project activities at all levels.

3. Environmental sustainability

The productivity of animals was increased as mortality was low and food conversion ratio high. The introduction of improved breeds of nucleus stock supported the production of around 25 to 33 piglets per sow in close to three farrows each year. The total production of animals during the project was 4 599 pigs from 144 piglets. Project activities aimed at upgrading the pig breeding system have contributed to environmental sustainability by improving productivity per animal.

4. Human Rights-based Approach (HRBA) – in particular Right to Food and Decent Work

The core of the project was the introduction of superior pig breeds, which multiplied the numbers of animals and produced meat in high quality and quantity. Meat production rose from 111.5 tonnes in 2017 to 153.8 tonnes in 2018, providing each direct beneficiary with a 37.8 percent increase in meat supply for domestic consumption. This has strengthened food and nutrition security.

5. Technological sustainability

The project's participatory and inclusive approach, which involved farmers, communities and relevant research institutes in project design and implementation, instilled a sense of ownership that will contribute to the technical sustainability of the results. The publication of a bilingual technical booklet on pig breeding and the organization of technical training and overseas tours will also ensure that stakeholders and beneficiaries are able to continue project activities on termination of external technical assistance.

6. Economic sustainability

The introduction of superior breeds of pig in commercial pig production operations in all the eight beneficiary farms has brought in considerable profits in terms of numbers of pigs and quantities of meat production, proving conclusively that the results of the project are economically viable and sustainable.

ACHIEVEMENT OF RESULTS - LOGICAL FRAMEWORK

Expected Impact	The project benefited 964 700 people in eight counties in North and South Hwanghae provinces and strengthened food and nutrition security by providing increased meat production through pig farming	
Outcome	Technical capacity of 19 704 farmers increased in North and South Hwanghae provinces to produce quality pork through improvements in pig breeding and better feeding and management practices on eight farms	
	Indicator	153.8 tonnes of pig meat production in 2018 (37.94% increase over 2017) giving rise to increased meat available per person, from 5.66 kg to 7.80 kg (37.8% increase)
	Baseline	Lack of improved breeds for pig production
	End Target	30% increase in production of pig meat
	Comments and follow-up action to be taken	Achieved an increase of pig meat production that was 8% more than that envisaged Pig breeding in other areas may be expanded

Output 1	Facility for breeding and raising pigs from farrow-to-finish established	
	Indicators	Achieved
	424 tonnes of cement, 12 tonnes of steel bar and 120 m^3 of timber provided Pig breeding and fattening houses established in an area of 204 m^2 in each farm	Yes
Baseline	No pig houses for superior variety breeds	
Comments	More units may be built	
Output 2	A nucleus stock of improved breeds (sow/boar) of pigs introduced for multiplication under different breeding schemes	
	Indicators	Achieved
	144 piglets (128 sows and 18 boars in 2:16 ratio) provided in eight farms in two provinces Multiplied 4 599 pigs in 2018 153.8 tonnes of pig meat produced in 2018 (37.94% increase over 2017) Pedigree record maintained Quarantine house in each farm/medicines available	Yes
Baseline	No improved breeds of pigs	
Comments	More farms introduced with improved breeds	
Output 3	Farm-level technical and managerial capacity for operation of improved pig breeding and husbandry system established	
	Indicators	Achieved
	Core group in each farm 418 farmers and senior officers trained in pig breeding (206 and 208 in two national training courses, respectively, and four in 15-day overseas study tour to Thailand) Bilingual Korean/English "Technical Handbook on Pig Production", published in 2017	Yes
Baseline	Limited knowledge in improved pig breeding	
Comments	Training of trainers at all levels of stakeholders may be started in the future	

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