

## **AGRICULTURAL SCIENCES**

### **EMERGING SWINE PRODUCTION TECHNOLOGIES TO KEEP PACE WITH INCREASING POPULATION**

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This paper presents some analyses and recommendations on how the swine subsector, as it continues to dominate the livestock sector and hence make up a significant proportion of the agricultural landscape, can become a logical and potent springboard in addressing the demographic crisis in the country. It also provides a framework showing the vital link between population, poverty and food security, with the contention that unless poverty is significantly reduced, the goal to attain food security remains a distant reality. This paper further presents a comprehensive discussion and vital recommendations on the role of emerging swine production technologies in meeting the protein requirements of the present and future generations of Filipinos, as well as in providing livelihood opportunities to empower the poor and the disadvantaged sector of the society.

During the last 10 years, R&D programs and initiatives were able to generate scientific and technological breakthroughs, which have significantly contributed to the improvement of swine production in the country. These include, among others, genetic and reproduction improvement through artificial insemination (AI), nutrition and feeding management, and animal health care. However, much still needs to be done to maximize the potential of these technologies, particularly for the backyard raisers.

With a projected population of 111 million by year 2025, the swine industry in the next 22 years must triple its pork production (2.8 million MT by 2025) to meet the projected demand (2.3 million MT by 2025). The ultimate task ahead is for all industry players to be able to encourage and empower hog farmers and farmer organizations to attain increased productivity and production efficiency, improved product quality, and reduced production cost toward an efficient, viable, and sustainable swine industry. The interventions required

from the industry players include: policy interventions; R&D/S&T interventions; technology/information delivery services; and market and input support services.

Vital to this goal is the *political will* of each and every player – government and private sectors alike – to participate in a concerted effort to uplift the plight of backyard raisers in the rural areas who account for 77 percent of the current swine inventory.

**Keywords:** swine, production technologies, strategies, genetic improvement, artificial insemination, nutrition, feeding management, animal health care.

### **THE RICE PROBLEM IN THE PHILIPPINES: TRENDS, CONSTRAINTS, AND POLICY IMPERATIVES**

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The comparatively poor performance of the rice sector in recent years is microcosm of the state of Philippine agriculture. Both domestic policies and institutions have constrained efficiency and raised the “cost of doing business” in agriculture, thereby blunting productivity growth and eroding the country’s competitiveness in the global marketplace. Rice has become more expensive in the Philippines than in other developing East Asian countries, owing principally to the government’s ill-advised self-sufficiency objective. Liberalizing rice trade enhances the welfare of the poor, especially landless workers and urban consumers, although the short-term cost to the rice sector in terms of reduced incomes and labor displacement may be quite substantial. However, when this is combined with public investment in productivity-enhancing support services (particularly R&D and irrigation), rice trade liberalization is a win-win proposition.

**Keywords:** Philippine agriculture, productivity growth, self-sufficiency, rice, trade liberalization

**CORN IN THE PHILIPPINES: FEEDING THE  
POPULATION BEYOND THE PRESENT**

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For the past several decades, white corn consumption has been limited to Southern Philippines, mostly in Cebu area. And yet white corn has a big potential to supplement the supply of food grain in the country. Nutritionally it is better than rice. Due to its "slow release" property, it is the staple of athletes and is recommended for diabetics. Corn, a C4 plant, is also more efficient photosynthetically than rice, a C3. Being an upland crop, it is basically rainfed and therefore does not need expensive irrigation facilities which is a must in rice. Corn could also be grown even in marginal environments but certainly could yield very high under optimum growing condition. The grain, however, has the stigma of being the food of the poor. With proper information campaign, however, and hopefully, subsequent acceptance, white corn has a big potential to supply the staple grain need of the Filipino populace expected to be 200 million in year 2050. With our farmed area not expected to increase and the foreseen water crisis, corn has a big role to play in our national economy and life.

**Keywords:** corn, consumption, slow release, rainfed, information campaign

## **SUSTAINABLE MARINE FISHERIES PRODUCTION IN THE PHILIPPINES**

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The fisheries sector plays an important role to the economy of the country. In the coastal and marine waters as well as aquaculture, it provides substantial benefits to the Filipino nation, not only on food and essential nutrients but also substantive employment and sustenance, and valuable foreign exchange for the country's developing economy. The total fisheries production is contributed by the three (3) sectors, namely; the aquaculture sector, municipal sector and commercial sector. In 2001, the marine landings were about 66% or 1,946,074 M.T. of the total fisheries production. Fishermen (small-scale and commercial) use various types of gears, with heavy concentration in inshore/municipal waters where production is highest. Despite the stable figures of catch and exports of the fisheries, this sector faces serious challenges in the management of fisheries. Overexploitation of coastal resources and other factors have been reported in various documents and forums, and the problem still continues. As a contribution to sustainable marine fisheries production, this paper discusses an overview of the fisheries resources, contribution of fisheries by sector, the major problems of the industry, sustainable fishing technologies, and fisheries management approaches and key recommendations. Sustaining the country's fisheries and coastal resources requires urgent and concerted action by responsible authorities and the wider participation of stakeholders in all levels. In this context, successful interventions must be required for the effective implementation of a wide range of measures as well as shifts in management perspectives.

**Keywords:** fisheries, sustainable, fishing technologies, management, production

**TOWARDS SUSTAINABLE AQUACULTURE  
IN THE PHILIPPINES**

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The Philippines has one of the highest per capita fish consumption in the world. However, in recent years the national total fish production could not meet this per capita requirement. There are three fishery resources, namely commercial and municipal fisheries and aquaculture, but only aquaculture offers the potential to fill the gap between increasing demand and supply. Further growth and development of aquaculture is faced with problems which can jeopardize its sustainability. Sustainable aquaculture requires that these key constraints are properly addressed. It is only then that the potential for growth and sustainability of Philippine aquaculture can be realized.

**Keywords:** aquaculture, Philippines, food security, environment