

Understanding the multi-functionality of agriculture

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prominent role of agriculture for human life throughout history has been widely recognized. Traditionally, agriculture is regarded as a basic sector that has several functions, including food production, workforce accommodation, raw materials for industrial sector operations and support for international trade operations.

In a common sense, agriculture has been perceived as an ordinary economic sector like industry and services. Support and attention toward the agricultural sector is similar to that received by other economic sectors. There is no significant additional incentive for people who engage in agricultural activities and promote the business.

However, in the beginning of the 1990s, many parties started to look at agricultural activities from a broader perspective. The Rio Earth Summit in 1992 formally brought out the term “multifunctional agriculture”. Agriculture was seen beyond its primary function of producing food and fiber.

As reported by Huylenbrock, et al., (2007), the debate on the multi-functionality of agriculture has been viewed as a process of agricultural policy reform, it was started in the mid-1980s. Agriculture was identified as playing a pivotal role beyond its traditional functions. In fact, agriculture is a multi-output activity producing not only commodities, but also a wide range of non-commodity outputs such as environmental services, landscape amenities and cultural heritages.

On a global scale, there is a growing realization that agriculture has a greater value. A wide understanding of the role of agriculture confirms that agriculture also has the eminent capability in shaping the environment, keeping social and cultural systems, and contributing to economic growth.

With regards to the functions of agricultural activities beyond producing food, Huylenbrock, et al., (2007) categorized them into the green functions, the blue services and the yellow services. Among the green functions are landscape management, maintenance of biodiversity and the creation of wildlife habitats. The blue services include water management, improvement of water quality and flood control. The yellow services can be in the form of rural cohesion and vitality, maintenance of cultural heritage, creating regional identity and agro-tourism.

In the other worlds, good practices of agricultural sector activities could produce environmental and social externalities that support the fulfillment of daily community needs. Even though strong positive externalities and or public goods have been produced through agricultural activities, those are seldom rewarded in the marketplace. Externalities of agriculture are also

difficult to be evaluated in money terms.

The methodologies of the calculation on the economic value of agriculture externalities are still debatable and face some technical difficulties. In general, two calculation methods have been used, namely the replacement cost method and the contingent valuation method. The replacement cost method calculates the cost to provide the same goods and services on the open market. While second type calculation is a contingent valuation method that basically will ask the targeted people about their willingness to pay for environmental improvement or accept compensation for environmental damages.

As documented by the Central Union of Agricultural Cooperative of Japan (2005), the agricultural sector in Japan has significantly contributed to the protection of national land and the environment that is valued at approximately ¥8.2 trillion (US\$103.19 billion) annually.

The value of externalities produced by Japanese agriculture came from ¥3.5 trillion from flood prevention, ¥1.5 trillion from fostering water resources, ¥8.7 billion from moderating summer heat, ¥331.8 billion from preventing soil erosion, ¥12.3 billion from recycling waste into fertilizers, ¥4778.2 billion from preventing landslides and ¥2.4 trillion from recreational amenities.

The acceptance of the facts of multi-functionality of agriculture leads to an understanding that agriculture should obtain stronger support from other sectors. Various measures of agricultural protection and smart subsidies are examples of the acceptance of the idea of agriculture multi-functionality.

By understanding and accepting the multi-functionality of agriculture, in the context of Indonesian agriculture, strong support and protection for the agricultural sector by the government and the other sectors are badly needed.

Appropriate policy measures are imperative to correct the market failure and to ensure the efficient allocation of resources. Farmers as the main actor of agricultural activities should get more incentives for managing and promoting good agricultural practices under the framework of sustainable agriculture development.

In case the externalities of agricultural activities are not fully taken into consideration, many countries may be forced to open up their domestic market by considering the price efficiency and simplicity of importing foods.

From the past experiences of international trade practiced by many countries, it can be noted that imported food may be cheaper and more varied than food produced domestically and equally in terms of nutrition. However, we should be properly aware that it is not equal in other ways. Domestic agriculture activities that produced domestic food may help conserve the local environment, while imported food does not.

Traditionally, development of domestic agricultural practices provides various jobs for people in rural areas, supports rural communities and supports local cultures, while imported food

potentially damages them.

A comprehensive understanding of agriculture multi-functionality to some extent sees that free trade of agricultural products may be very costly for food imports. Massive and systematic food imports will potentially undermine the sustainability of domestic agriculture and finally remove these other functions of agriculture.

Accepting the principles of agriculture's multi-functionality and its socio-economic consequences does not mean accepting all of contemporary agricultural practices. Exploitative and unfriendly agriculture practices should be avoided. High external-input agricultural systems often encourage excessive use of chemical fertilizers and pesticides that will damage the environment.

Proper use of locally produced agricultural inputs will be very crucial for managing good agriculture practices. Crop rotation on rice fields, mixed cropping practices, terrace farming, and agroforestry are regarded as types of better practices of agriculture. Those systems to some extent also can serve as a risk minimizing and risk coping strategies. Farmers can introduce an integrated farming system combining food crops, trees, fruits, livestock and fish by keeping its multi-functionality covering economic, cultural and ecological conservation purposes.

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