

MULTIFUNCTIONALITY OF AGRICULTURE UNDER GLOBAL TRADE LIBERALIZATION

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Abstract: The new round of WTO (World Trade Organization) negotiations on agriculture has been in process since March 2000. According to Article 20 of the GATT Agreement on Agriculture (AOA), the non-trade concerns (NTCs) are to be taken into account in the new round of negotiations on agriculture in the WTO. The concept of multifunctional agriculture has gained substantial international attention during the agricultural negotiations, and multifunctionality has been one of the major issues raised and discussed fervently in the negotiations. Multifunctionality is a relatively new concept embracing older ideas. It is relevant to NTCs, but there is also a difference in between. Non-trade concerns aim at goods that are not handled properly by the market mechanism (e.g. public goods), tradable and non-tradable goods are treated as separate issues; multifunctionality, on the other hand, integrates the issues into a consistent framework. Although the concept of multifunctional agriculture has gained acceptance by many nations, the implications of this concept for agricultural policy are controversial. Under the WTO framework, the national policy instruments have to be legitimate in relation to the international community and the agreements. However, the legitimacy is closely tied to the rights structure. How to assign rights is, therefore, an important issue to be discussed, in particular at the international community where there is still no “agreed-upon” rights structure. This paper aims at clarifying the concept of multifunctionality in agriculture and discussing proper measures to help in ensuring adequate level of public goods provided by the agricultural sector.

Keywords: agricultural policy, trade liberalization, non-trade concerns, multifunctionality

I. INTRODUCTION

The new round of WTO (World Trade Organization) negotiations on agriculture has been in process since March 2000.

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Although the concept of multifunctional agriculture has gained acceptance by many nations, the implications of this concept for agricultural policy are controversial. Under the WTO framework, the national policy instruments have to be legitimate in relation to the international community and the agreements. However, the legitimacy is closely tied to the rights structure. How to assign rights is, therefore, an important issue to be discussed, in particular at the international community where there is still no “agreed-upon” rights structure.

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II. CHARACTERISTICS OF MULTIFUNCTIONALITY IN AGRICULTURE

1. Concept of Multifunctional Agriculture

According to Romstad et al. (2000), multifunctionality can be defined briefly as: the set of interlinked outputs from a productive activity where some goods are private and some are public.

Agricultural production is a system producing both private and public goods which are interlinked as a multiple set of functions. Thus, multifunctional agriculture implies that agriculture

entails more than what is traditionally perceived as its main function: producing food and fiber. In other words, agricultural activities provide not only food and fiber but also other functions associate with.

The most central elements of multifunctional agriculture can be cataloged into three major aspects:

- (1) Food related aspect: food security, food safety and food quality.
- (2) Environment/landscape related aspect: biodiversity, amenity value of the landscape, recreation and access, scientific and educational value, and cultural heritage.
- (3) Rural development related aspect: rural settlement and economic activity.

These goods derived from agricultural activity are normally region or site specific. Most of them have public good attributes. In addition, some of the public goods associated with agricultural production (e.g., landscape values, food safety and part of food security) are provided uniquely by agriculture.

The public goods linked to agriculture partly from the use of inputs, the production methods, or qualities concerning the private goods themselves. These links between the private and public goods provisioning may be characterized as joint, complementary, or competing.

2. Public Goods Derived From Agriculture

2.1 Concept of Public Goods

Public goods are contrary to private goods. They can be jointly consumed by many individuals simultaneously at no additional cost and with no reduction in the quality or quantity. Public goods are unlikely to be allocated by market mechanism efficiently.

Figure 1 shows that private and public goods can be distinguished by the two characteristics: rivalry and excludability. Dividing goods by the dimensions of excludability and rivalry can also help in resolving the issue of resource allocation and market efficiency.

The more exclusive and rival a good is, the market is more likely be able to provide efficient allocations of resources. The main reason for this is that when rivalry is not possible, it becomes difficult to charge individuals for enjoying the good. Besides, if the good is not exclusive in consumption, the free-rider problem will appear. Some individuals believe that others will take on the burden of paying for public goods, so that, individually, they can escape from paying for their portion without a reduction in production of the public goods. Thus, when excludability and rivalry are low, the market price is unlikely to reflect consumers' willingness to pay and producers' marginal costs of production. This implies that the market mechanism is not working properly, and market intervention may be needed for goods other than private goods.

Agricultural activities lead to various public good attributes. Some of them are non-exclusive, some are non-rival, and some are both. This implies that some of the attributes associated with agricultural activities can not be efficiently allocated by the market, let alone by the market for the private goods provided by agriculture.

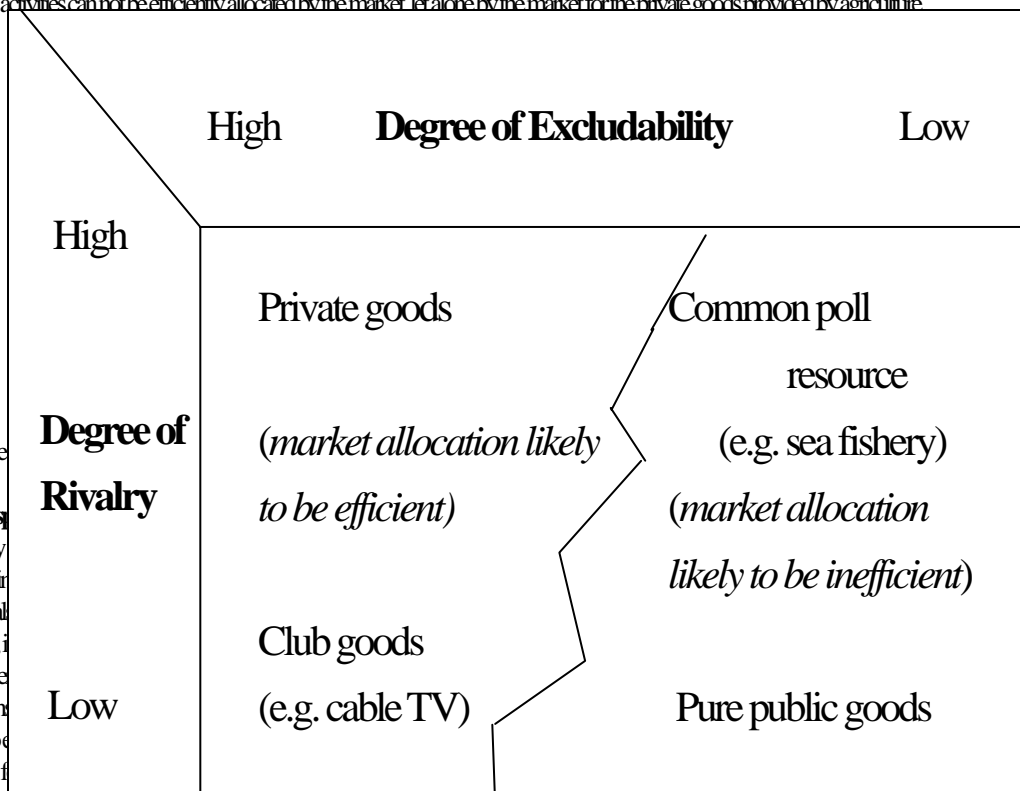


Figure 1: Public and Private

2.2 Food Related As

Food security, food safety
 Food security can be defined
 dimensions to fulfill the goal
 A combination of stocks, is
 costly. Thus, in a long run pe
 However, imports, as means
 maintained domestically to c
 public good, and measures f

Food safety is an important dimension of food security, since for food to be adequate, it has to be safe to eat and nutritious to eat. When domestic food safety standards exceed the standard of products imported from abroad, high domestic production levels reduce the risk of contracting food related diseases from foreign countries, domestic food production thus has positive effects on food safety.

Food quality is another closely related dimension of food safety and food security. Nutrition value, taste, smell, looks, use quality, health effects, culture value, ethical value, etc. are attributes related to food. Hence food quality is a wider concept of food safety and is related to food security; it contains private and public attributes. Externalities provided in the agricultural production process may also influence the quality of food.

Thus, food can be regarded as an "impure private good" which has characteristics of being a public good. Domestically produced agricultural products therefore have additional values even though they are "like products" of imports (Romstad et al., 2000).

23 Environment/Landscape Related Aspects

Agricultural activities also have implications for many environment/landscape related attributes: biodiversity, cultural heritage, amenity value of the landscape, recreation and access, and scientific and educational value.

Biodiversity includes genetic, species and ecosystem diversity. Agro-biodiversity adds to biodiversity at the same time as agricultural areas compete with other nature areas and its biodiversity. Up to a certain level, biodiversity may be positively linked to the area used for agricultural production. However, in regions where a large percentage of the total area is agricultural land, increased agricultural acreage may reduce biological diversity.

According to Romstad et al. (2000), agriculture is an important basis for many nations' culture and identity. The landscape and its cultural content add to understanding the life of former generations. This contributes to the identity and symbolic values of agriculture and the landscape. The rural culture is closely linked to agriculture and is a determining factor for the total landscape picture. The cultural heritage enhances the value of the landscape esthetics and, thereby, enhances the recreational value of the landscape.

To sustain the linkage between agriculture, the landscape and the cultural heritage, some adequate agricultural production must be maintained. Besides, a variety and local difference in type/mode of production is central to the diversity of the cultural heritage locally and nationally.

The amenity value of the landscape depends on the cultural and the natural landscape. Biodiversity, cultural components, open space and activity are important factors contribute to the esthetics of a landscape. Agriculture adds to the amenity value of the landscape through increasing the diversity of the landscape and creating an active landscape. Agricultural production results in open space also. However, the providing of open space may go from having a positive effect on the amenity value of the landscape to reducing it.

The landscape provides space for recreation at the same time as it contributes to the recreational value through its esthetics. Access is an important factor for recreation so that people can use the landscape freely and over longer distances. Agricultural activity can contribute to the recreational value of the environment/landscape, through the esthetics or through improving access.

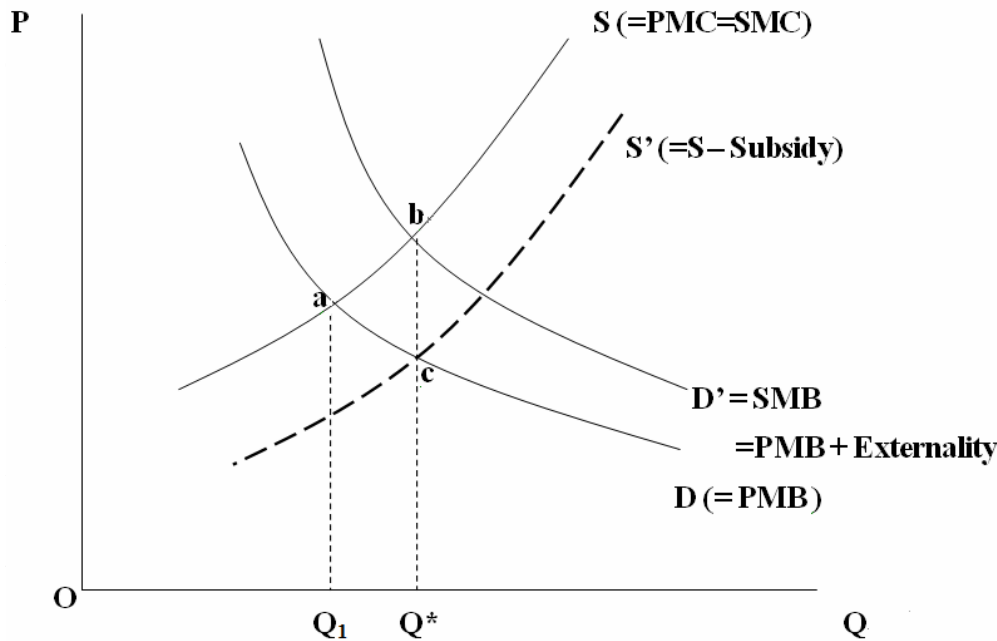
The active agricultural landscape may also function as a contributor of knowledge for the public in general. This knowledge is attached to the linkages between nature, the production system and food. Therefore, agricultural production increases the scientific and educational value of the landscape, except that it is introduced in natural areas that are special and scientifically valuable.

24 Rural Development Aspects

Agriculture also plays a very important role in improving the viability of many rural communities. Farm household contributes to off-farm supply of labor, as well as on-farm demand for labor. Processing of agricultural products, use of service institutions, economies of scale effects in the municipality, tourism, etc. are all linkages of farming to the off-farm economic activities. This implies that, besides farming, farm-household labor is very important for the non-farm economics activities in rural areas.

Agricultural activity also contributes in stability of the farm sector as well as the whole economy. The agricultural sector is more stable than other sectors as family farming is more of a lifestyle than most other jobs. Cultural conditions, social reasons, property rights, age and education, etc. are reasons cause farm employment less mobile and affected by the business cycle

ion. upon agriculture as a source of income is greater than an essential instrument (Romstad et al., 2000).



et economy will provide a Pareto-efficient allocation. We call these cases of market failure. The market, or not reflect all the benefits of the item. Natural o modify, restructure, complement, or supplement the eived by members of the society but are not taken into s, the government can (1) finance the production of the e), and (3) require by law that a certain action be ned in the previous section, non-rivalry and non- y does not apply. No one can be excluded from the

Figure 2: External Benefits

Under these circumstances, the number of people willing to pay for consuming a public good will be diminished. If a public good is produced by the private sector and is sold in the market, the output will be biased and is lower than what it should be. Even if the non-free riders willing to pay for the public good, the prices they would like to pay are according to the private marginal benefits instead of the social marginal benefits. Externality will cause the quantity produced lower than the quantity maximizes social welfare (Figure 2). In addition, non-rivalry causes the market demand curve of a public good differs from the demand curve of a private good. For a private good, the market demand curve is the horizontal summation of individual demand curves; for a public good, it is the vertical summation. It is because that the quantity of supply determined by the market can be consumed by each individual at the same time as shown in Figure 3.

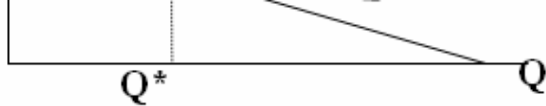


Figure 3: Public Good Market

The quantity produced (Q^*) is determined by the condition when social marginal cost ($SMC=S$) equals to social marginal benefits ($SMB=D$). The quantity produced (Q^*) can be consumed by either individual A or individual B. To consume this amount of the public good, individual A should pay P_a , while individual B should pay P_b . The market price $P^* = P_a + P_b$. However, it is very difficult to distinguish the demand of each individual and to charge them for different prices. Moreover, if SMC and SMB intercept at section bc, individual A will be charged for a zero price. This in turn will encourage individual B to become a free rider. Therefore, public goods usually can not be provided sufficiently by the private sector, and should be provided by the government or the market should be intervened by the government.

Market failure is not the only case when government intervention is required. The failure to serve social goals other than efficiency, such as a desired distribution of income or the preservation of value systems, also requires interventions by the government.

According to Romstad et al. (2000), any welfare economic analysis entails a weighting of different interests roots in the rights structure and perceptions about equality and fairness. Free trade may deteriorate or damage the realization of important public goods in some countries. Net domestic effects of international trade for some commodities may then be negative for these societies.

Should a country be allowed to pursue policies that ensure domestic public goods, even if these policies limit the export countries' access to domestic markets? This is a key international rights issue. Regretfully, choosing rights principles is a very difficult issue when no common social welfare function exists in the international community.

The distinction made between 'trade' and 'non-trade concerns' is at the core of the rights issue. Non-trade concerns are normally restricted to public goods provisioning. However, if private and public goods are interrelated in production, such a distinction can not be drawn. Instead, the issue becomes a question about defining what a legitimate protection is, and what an illegitimate harm to others is. The concept of trade distortions follows from a theory where the assumptions are that every trading nation gains from trade. When this is not the case, avoiding trade distortions actually becomes a restriction on the system and forces some countries to choose less efficient solutions.

When a country is unable to compete in the market for private goods, the joint supply of public goods will vanish. In this case, a price support equal to the marginal value of the jointly produced public goods is the most cost efficient. There are two remarks to be made to this conclusion. First, if the public good can be separately observed, a direct payment is possible, but will result in increased transaction costs. Second, in many cases, jointness will exhibit a competitive range. In such a situation, some payment directly towards the public good may be warranted. In the case of complement or competing relationship, the argument for some form of direct payments increase considerably.

To formulate a good policy package for multifunctional agriculture is not a simple task. However, Romstad et al. (2000), concluded several principles:

- (1) payments for public goods/positive externalities and taxes/regulations to reduce negative externalities,
- (2) the use of regionally differentiated product prices including some import levies,
- (3) the use of management contracts to further secure the provisioning of public goods, and
- (4) informative measures and locally based public good provisioning campaigns.

Agricultural production is interlinked with many public goods. Any policy influences the amount of public goods provided by agriculture will influence trade behaviors. Therefore, the following issues raised by Romstad et al., are important for the international community to address:

- (1) Clarifying what are legitimate national concerns when policies to deal with these issues will influence trade patterns.
- (2) What constitutes fair and equitable principles for balancing domestic provision levels of public goods vis-à-vis the need for transparent rules in international trade?

IV. CONCLUDING REMARKS

Agriculture, unlike industrial or service sectors, possesses special and unique characteristics in each individual nation. It is limited and characterized by land resources, climate, soil conditions as well as cultural heritage etc. Without the existence of agriculture and its related activities, not only the environment and the quality of life in the region will be deteriorated tremendously, but also the economy will be seriously affected.

For Taiwan, agriculture played a very important role in economic development during the past several decades. It provided the necessary inputs for the development of the industrial and service sectors by exporting agricultural commodities for foreign exchanges during the early stages of her development. However, due to the sharp increase of producing costs, many of Taiwan's agricultural products have lost their competitiveness dramatically in the world markets.

In addition to agricultural products, agriculture in Taiwan also provides many other functions. Safeguarding food security, maintaining landscape, ensuring social stability and protecting environment are some of the major functions provided by the multifunctional agriculture. During the process of agricultural trade liberalization, we believe that all the nations have the rights to maintain their multifunctional agriculture adequately.

Small household farming, only about 1 hectare per farm in average, is one of the characteristics of Taiwan's agriculture to produce staple food and some other basic food mainly for domestic consumption. Most of the agricultural products produced domestically are not competitive in the world market, and the limited amount produced would not affect the benefits of exporting countries significantly. In addition to the small size of the farm, the wage rate and land values are so high that the investment in agriculture usually does not generate reasonable income to support the living of farmers.

With these regards, to guarantee an appropriate income level for farmers has been one of the government's policy goals. Furthermore, the main purpose for Taiwan to produce basic agricultural products, especially staple food crops, is for the concerns of food security, environmental protection, and other non-trade concerned issues. In addition, since there are business cycles in the non-agricultural sectors from time to time, it is a consensus of the people in Taiwan that adequate size of the agricultural sector and its associated activities should be maintained to prevent from economic instability and to help in stabilizing the whole society.

To tailor adequate measures to suit for the needs based on individual nation's specific condition is important. In addition, it takes time for adjusting the structure of domestic agricultural sector to minimize the transaction costs and impacts of trade liberalization. Therefore, the agricultural trade liberalization process should be persistently but gradually. Besides, longer time period and more flexibility for national policy design are urged for the reform process.

As a member of the international community, Taiwan should and is willing to cooperate with other nations to pursue for the goal of improving

the standard of global welfare. Trade liberalization is a tool, but not a goal, in support of sustainable agricultural development and improving the social welfare standard. The adjustment to freer trade in agriculture will not be without pain and cost. However, if proper approaches are taken, the welfare of farmers and the society may be maintained or even improved. The cost of adjustment, as well as the time required to accomplish the reform process could all be reduced to an acceptable minimum.

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