Glocalization with paradigm shift from fordism to nichism and university social responsibility for sustainable agricultural development in globalizing economy

Yoshio Kawamura

President, Kyoto Prefectural College of Agriculture
Professor Emeritus, Ryukoku University, Kyoto, Japan

E-mail: yoshiokawamura@hotmail.com

Abstract. The major concern is to clarify how to cope with the globalizing economy for agriculture, which is strongly characterized by peculiarity as nature. The peculiarity is directly determined by natural and social environments and associated with differentiated development mechanisms of agriculture, which is almost dichotomized between land-productivity oriented and labor-productivity oriented development path. Peculiar agriculture has to face market competition with price in a globalizing economy and requires strong direct linkages with market to survive in the competition. This means the necessity to differentiate markets between Fordism type and Nichism type of market: the former is a general quantity-oriented market achieving a larger scale of consumption with lower price: and the latter is differentiated quality-oriented market achieving stable scale of consumption with higher price. That market differentiation is directly related to the differentiation of agricultural development paths. Those differentiated producer-consumer linkages indicate comprehensive rural-urban linkages. This is a process of rebuilding the rural-urban relationship in society. In order to achieve the goal, it is heavily dependent on local universities. They have to commit their social responsibility to identify the nature of local agricultural development and the relationship between agricultural production and food markets. Without a direct commitment from universities, the local agriculture and rural community will have no possibility of sustainable development under the circumstances of globalizing economy. This is why the current society is identified as a knowledge-intensive society, and the university is expected as the quaternary industry.

1. Introduction

The major concern of this presentation is to clarify how to cope with the globalizing economy for agriculture which is strongly characterized by peculiarity as nature. Globalization of the economy has been progressing rapidly along with the development of advanced information technology. Since the national economy is based on local communities, acute tension builds up between globalization and locality. For example, conflicts between a transnational corporation and government/local communities and difficulty in international coordination originate in this tension.

It is important to note that globalization does not have the same impact on every type of industry or business but brings about a beneficial or adverse impact according to the mobility (liquidity) of the inputs and outputs of a particular industry. Most of the industries have a significant positive correlation between inputs and outputs in mobility but agriculture, which deals with land, is placed in
a peculiar position: land, which is the most important and basic input for agricultural production, has no mobility and can be supplied only locally, while its outputs, farm products or food, are traded commodities with a relatively high degree of mobility and are demanded globally across national boundaries. For this reason, agriculture is most difficult to cope with globalization.

The first session of this presentation explains how the peculiarity of agriculture is determined by natural and social environments and associated with its development mechanism. For this, Max Weber’s method of dichotomized ideal models is introduced to explain between land-productivity oriented and labor-productivity oriented development path. Then, the second session deals with how peculiar agriculture has to face market competition with price in the globalizing economy for surviving in the competition, by introducing new conceptual frameworks of Fordism and Nichsm and differentiating markets between quantity-oriented market achieving the larger scale of consumption with lower price: and quality-oriented market achieving stable scale of consumption with higher price. This market differentiation is directly related to the differentiation of agricultural development paths. The third session argues the heavy social responsibility of local university to commit local agriculture and communities to solve their problems for development under the circumstances of globalization. This is university social responsibility as a quaternary industry in the post-industrial society.

2. Agricultural Development Path with Peculiarity: Land-productivity Oriented vs. Labor-productivity Oriented

Agriculture is an organic manner of production based on life, while other industries such as manufacturing are non-organic/mechanic production. Thus, the forms of agricultural production are heavily dependent on natural conditions (weather, geographic features, water supply, etc.), which are peculiar to regions or local conditions. The natural conditions determine the requirement of labor input, that is, labor demand for agricultural production. At the same time, the peculiarity of regional agriculture is intensified by the social environment determined by the lifestyle of people in the region, determining the availability of labor inputs, that is, labor supply for agricultural production. Thus, the peculiarity brings a different type of development path to regional agriculture.

Figure 1 shows a model of agricultural development simplified by dichotomization in the regional peculiarity. The wet area and dry area are the two ideal models of the natural environment, while the traditional and new societies are the two ideal models of the social environment. The wet area requires intensive labor input for agriculture, compared with the dry area, while traditional society indicates densely populated areas providing sufficient labor supply with a lower wage, compared with a new society, which is a thinly populated area associated with a relative shortage in labor supply.

![Figure 1. Typology of agricultural development in the temperate zone [1].](image-url)
In the figure, the type A agriculture (wet area and traditional society) and the type D agriculture (dry area and new society) develop in completely different ways. The former is oriented toward labor-intensive agriculture with the improvement of land productivity as a distinctive feature, which is strongly associated with farming multiple crops on a small scale of land operation. The latter is geared to labor-saving agriculture with the improvement of labor productivity as a distinctive feature, which is associated with farming monoculture on a large scale of land operation. In the former, capital investment is focused on floating capital in order to accelerate technological innovation for land productivity concerning the objects of labor, while in the latter capital is invested in fixed capital to accelerate technological innovation for labor productivity concerning the means of labor. Typical examples of type A and type D agriculture would be Japanese and American agriculture, respectively.

3. Production-Market Linkage: from Fordism to Nichism

This differentiation of agricultural development path, which indicates the characteristics of supply-side in food markets, is intensified by the differentiation of demand-side in food markets. Figure 2 shows this relationship between the production-side and consumption-side. The figure introduces the dichotomized concepts, Fordism and Nichism. Fordism indicates the economy of large-scale or mass production of specific general goods, which in agriculture takes the form of monoculture, large-scale land operation with mechanization (type D agriculture in Figure 1). Nichism indicates the economy of specialized production differentiated from general goods, as used by the phrase of a niche industry, which in agriculture takes the form of multiple-crop farming, small-scale land operation with fertilization (type A agriculture in Figure 1). It is important to notify the interlocked relationship between the production-side (supply-side) and consumption-side (demand-side) in the form of Fordism type and nichism type of development.

Fordism type of agriculture (type D agriculture in Figure 1) is directly associated with Fordism type of market, which is in-differentiated general market (A1,A2 in Figure 2) and which is quantity-oriented market achieving the larger scale of consumption with lower price. Nichism type of agriculture (type A agriculture in Figure 1) is directly associated with nichism type of market (C in Figure 2), which is differentiated market to specific customer and which is a quality-oriented market achieving the stable scale of consumption with a higher price. The essential problem is that Fordism type of development has been widely accepted as the conventional way to achieve modernization, while nichism type of development has been widely ignored as the local and non-modern (that is, traditional) way because of basic difference of the conceptual framework for development.

Figure 2. Strategic framework of production-market linkages [2].
4. University Social Responsibility (USR): from Deductive to Inductive Approach

The shift of development scheme from Fordism type to nichism type is heavily dependent on the commitment from a local university since scientific research is necessary to identify the peculiarity of local agriculture as well as the relationship between agriculture and market. Without the direct commitment from a university, local agriculture and rural community will have serious difficulty for sustainable development under the circumstances of a globalizing economy.

This university commitment to local agriculture and community will associate with the paradigm shift of academic research and education. Figure 3 shows the diagram of “Theory Construction Cycle from Strong Hypothesis to Weak Hypothesis” demonstrating the relationship between the two key factors, validity, and reliability, that enable effective research and education. Validity can be obtained through a process of learning theories and a process of constructing hypotheses based on previous research. Reliability can be obtained through a process of gathering actual data and a process of analyzing the data, which is a process of a hypothesis test.

Figure 3. Theory construction cycle from strong hypothesis to weak hypothesis [3].

However, in the case of coping with a real problem at the level of local agriculture and community, an essential element in the theory construction cycle is the attitudes of a researcher, shifting from a deductive approach to an inductive approach. The former is an attitude of “theory is first,” having a strong hypothesis, and the research purpose is to test the validity of the hypothesis. The latter is an attitude of “the fact is first” having a weak hypothesis, and the research purpose is to provide a better hypothesis that should have more realistic validity in practice. Obviously, the former is a solid attitude, and the latter is a flexible attitude as a researcher.

This shift from deductive to inductive approach is an essential part of university reform in education and research to adjust the current societal change. It is important to admit that this shift can be realized through the direct linkage between university and the local community, which is recognized as a university cooperative extension in USA. Constructing the direct linkage between university and the local community is also required for local agriculture and the community to achieve sustainable development under the circumstances of globalization. This is why the current society is identified as a knowledge-intensive society in which the university is expected to function as the quaternary industry.
It was the 1970s in the United States and the 1980s in the case of Japan to understand that the social transition had occurred into the stage of post-industrial society in which the tertiary industry became predominant and to recognize the necessity of extracting quaternary industry which refers to the portion of the tertiary industry that is related to research and development. Globalizing the economy, which is directly related with high-tech information development, has been leading to the expansion of the quaternary industry. Thus, the quaternary industry has become the driving force of the development of a society in this age of globalization. Therefore, there is an urgent need to build up a direct local linkage of university and a local community that cultivates local agriculture and community capable of functioning in a knowledge-intensive society. This is a fundamental reason why we should recognize the social responsibility of a university for societal development in the globalizing era.

Reference

[1] Kawamura Y and Inamoto S 1999 Research Subjects and Methodology in Association of Agriculture and Forestry Economics (ed.) Research Subjects and Methods in Regional Agriculture and Forestry Economics (Osaka: Fumin-kyokai)

[2] Kawamura Y 1998 Rural Revitalization and Role of Local Governments (Tokyo: Ienohikari-kyokai)

[3] De Silva S 2017 Developmental Dynamics: Transforming Societies for Sustainable Futures: a Festschrift in Honour of Professor Piyadasa Ratnayake (Saga: Economic Association of Saga University, Faculty of Economics, Saga University)