

## ALTERNATIVE DEVELOPMENT FROM FORDISM TO NICHISM FOR ASIAN AGRICULTURE IN GLOBALIZING ERA

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**Citation:** Kawamura, Y., 2017. Alternative Development from Fordism to Nichism for Asian Agriculture in Globalizing Era. *J. Asian Rur. Stud.* 1(1): 1-12

**Abstract:** The 21<sup>st</sup> Century has become a more globalized society which is directly associated with very quick development of high technology in the field of information science. Any country has to face the problem to develop itself under this international environment. Especially agriculture is the most difficult industry to adjust this change because of its peculiarity which is directly determined by the natural and social environment within the country. This paper deals with a basic strategy for agricultural development in the globalizing economy, based on its socioeconomic characteristics. The paper argued that the relationship between industries and economic globalization is directly determined by the combinations of mobility of inputs (resources) and mobility of outputs (products). Most of industries have a significant positive correlation between these mobility but agriculture 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 the industry for which it is most difficult to cope with globalization. This paper clarifies the peculiarity of agriculture by socioeconomic approach to get a sustainable development in globalizing economy.

**Keywords:** agricultural development; globalizing economy; agricultural peculiarity; fordism and nichism

### 1. Introduction

In the 21<sup>st</sup> century, any country is expected to develop into a more globalized society which is directly associated with high-tech information development. With this background, this paper deals with a basic strategy for agricultural development in the globalizing era, based on socioeconomic characteristics of agriculture. For this purpose, we shall consider: firstly, the changes in the international environment to which

agricultural communities have to face; secondly, the peculiarity of agriculture which is a given condition directly affecting the process of agricultural development in globalizing economy; thirdly, the strategic framework for agricultural development in the globalizing environment; and lastly, the roles of rural studies in the agricultural development in the globalizing era.

## 2. Industrial Differentiation in Coping with Globalization: Mobility of Input Resources and Output Commodities

Globalization of the economy (and domestic deregulation is the other side of the same coin) is progressing rapidly along with the development of advanced information technology. Since, however, national economies are still based on countries or local communities, acute tension builds up between globalization and locality. Conflicts between transnational corporations and national governments/local communities and difficulties in international coordination all originate in this tension.

It is important to note that globalization does not have the same impact on every type of business but brings about a beneficial or adverse impact according to the mobility (liquidity) of the inputs and outputs of particular industries. Figure 1 shows the types of industries according to the combinations of mobility of inputs (resources), on which an industry's production process depends, and mobility of outputs (products), on which an industry's commodity market depends.

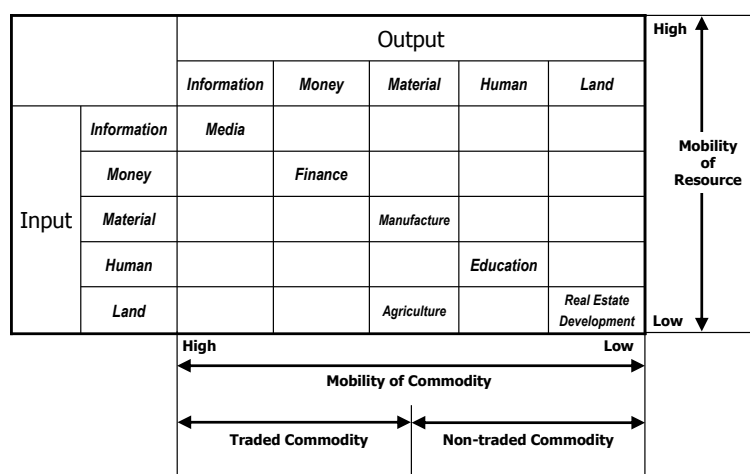


Figure 1. Type of Industry by Input-Output Mobility

Sourced: Kawamura, Yoshio, (1998). "Rural Revitalization and Role of Local Governments" in Tsuneo Koike (ed.) Japanese Agricultural Development and Roles of Local Governments, Tokyo: Ienohikari-kyokai, p.144

“Information, money, goods (materials), human (labor), and land” is the order of mobility of both inputs (resources) and outputs (products), and these resources and products would be placed in the reverse order in terms of locality. Seen from the input side, information and money with high mobility can be procured globally (across national boundaries), while land with zero mobility can be supplied only locally. Human resources, which have limited mobility (there are social barriers such as language, values and customs), are relatively difficult to procure globally. The same thing can be said on the output side: information and money as merchandise have a high degree of mobility and therefore can be traded globally regardless of nationality, while there is only locally limited need for land. Education is typically human-related merchandise, and it is relatively difficult to find global demand for education because the demand for education is of a local nature due to cultural and social barriers such as language, values and customs. We shall call such merchandise with strong locality a “non-traded commodity” market as opposed to a “traded commodity” market, which is merchandise of more general, common or universal character.

Industries related to communication, news media and finance, which deal with information and money, are the most susceptible to globalization and are at the same time in the most advantageous position to cope with globalization. In contrast, industries dealing with land such as real estate development are only indirectly influenced by globalization and they find it hard to cope with it. Education, which deals with human resources, is also one of the industries on which globalization has only an indirect influence and cannot easily be coped with. Since, however, the outputs of these industries are non-traded commodities; they are protected from harsh global competition by social barriers.

It is important to note that most of 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 the industry for which it is most difficult to cope with globalization.

What, then, should we do with agriculture? There are two alternatives. One is to treat agricultural products as traded commodities and to look for a means by which to survive global competition. The other is to regard agricultural products as non-traded commodities and to avoid global competition. Which to choose depends on our

evaluation of agriculture's characteristics on the supply side as well as the nature of the food demand side.

Since agriculture is a unique industry with strong locality, it can cope with globalization most effectively when those who are engaged in agriculture "think globally and act locally." It is necessary, therefore, to analyze the universality or common nature and local peculiarities or unique nature of local agriculture and to have an objective evaluation of its strengths and weaknesses. It is also necessary to identify the nature and characteristics of the demand side which is directly related to food culture. These clarifications are the first social responsibility of rural studies for agricultural/rural development.

### **3. Basic Framework for Agricultural Development Mechanism: Labor Intensive Type (Labor Productivity Oriented) vs. Labor Saving Type (Land Productivity Oriented) of Agricultural Development**

This section suggests the basic framework for agricultural development. We clarify the dynamic structure of agricultural development which is directly affected by regional or local conditions. An objective evaluation of the strengths and weaknesses of agriculture based on regional peculiarities must be performed before we can achieve sustainable development to cope with globalization.

Agriculture owes its characteristics to the fact that it is an organic manner of production while other industries such as manufacturing are inorganic 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. At the same time, the regionally peculiar characteristics of agriculture are intensified by the social environment, that is, the lifestyle of the people in the region who are economic entities. Land, labor and capital, which are the inputs needed for production, vary qualitatively and quantitatively from region to region. The regional peculiarities bring a different type of development path to regional agriculture. This is the basic reason why the same development theories or principles that are applied to other industries such as manufacturing can not be simply applied to agricultural development.

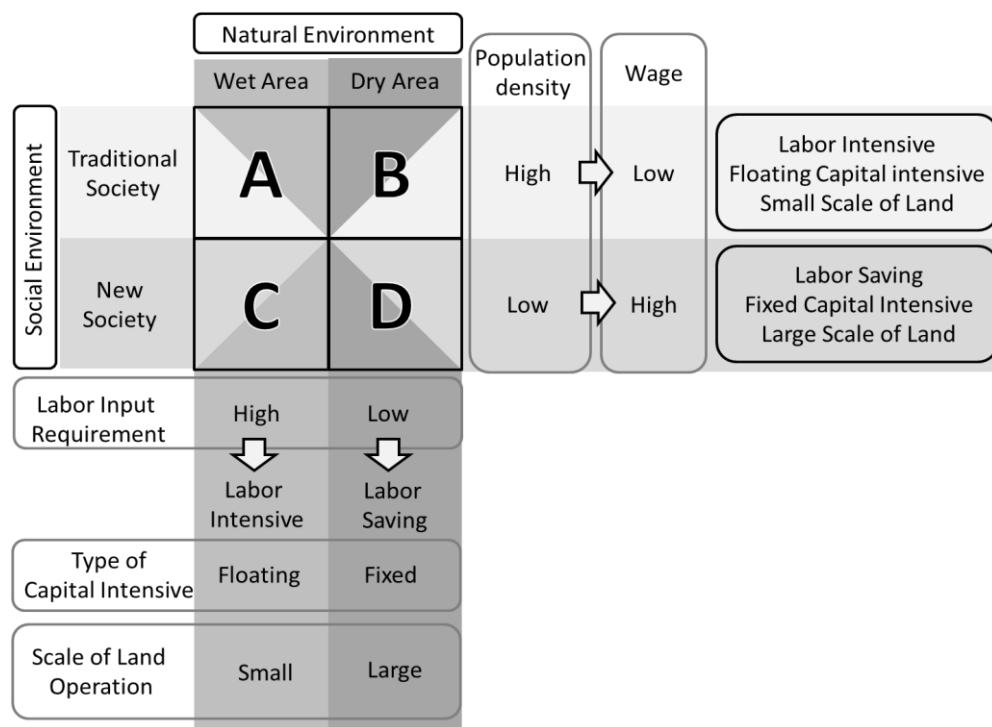


Figure 2. Types of Agriculture in Temperate Zone

Source: Kawamura, Yoshio, and Shira Inamoto, (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, p.53.

Since agriculture is organic production, it is directly affected by two environments, the natural environment and the societal environment, whereas other industries are affected generally only by the latter environment. Figure 2 shows a simplified model of the regional peculiarities of the manner of utilization of the inputs (capital, labor and land). Here, a wide variety of natural and social environments are dichotomized into two simple models for each. The wet area and dry area are the two simplified models of the natural environment, while the traditional and new societies are the two simplified models of the social environment.

In wet areas, unless intensive labor is input during the period from sowing to harvesting, fields will become overgrown with weeds due to the high temperature and humidity and the yield will drop. How intensively labor can be input that is, how meticulously crops are taken care of, determines the yield. Accordingly, agriculture in wet areas must become very labor-intensive and is geared to improving land productivity. Technology development and capital investment are focused on mainly

floating (circulating) capital such as new breeds and fertilizers. With labor as a given condition, the scale of agricultural management has to be small.

In contrast, in dry areas, there is a relatively weak impact of the labor input on the yield during the period from sowing to harvesting, compared with wet areas, because of less impact of weeds on the yield. Thus, in order to increase the yield, it is necessary to cultivate as much land as possible with limited time and labor force. Agriculture in such areas has to be labor-saving to cultivate more land with a given condition of labor force, and thus aims at improving labor productivity. Technology development and capital investment are made in fixed assets such as agricultural machines. Land operation on a large scale is the logical answer.

“Traditional society” means a society with a high population density such as in Asian and European countries. In such a society, the high density of population provides an excessive supply of labor and reduces the standard of wages. As a result, labor-intensive economy is a more rational option. Agriculture too has to become labor-intensive, inputting into a piece of land as much labor as possible to increase the yield. The improvement of land productivity is the guiding principle of such agriculture. With limited land and large population as given conditions, land operation on a relatively small scale is an inevitable result.

“New society” is a society with low population density such as America and Australia. Low population density means shortage of labor, which in turn leads to a high standard of wages. Naturally, labor-saving economy is more rational in such societies. Since a large tract of land has to be cultivated with a limited number of labor force, agriculture has to be labor-saving and aims at improving labor productivity. Accordingly, the scale of land operation has to be large.

By making models of agriculture, we have seen that the type A agriculture (wet area and traditional society) and the type D agriculture (dry area and new society) develop in completely different, in fact, contrasting ways. The former is oriented toward labor-intensive agriculture with the improvement of land productivity as a distinctive feature, while the latter is geared to labor-saving agriculture with the improvement of labor productivity as an objective. In the former, investment is made in floating capital in order to accelerate technological innovation concerning the objects of labor, while in the latter capital is invested in fixed assets to accelerate technological innovation concerning the means of labor. Typical examples of type A and type B agricultures would be Japanese and American agricultures, respectively. According to this modeling, the modernization of Japanese agriculture associated with the national economic

development can be regarded as a transition from A (traditional society=low-wage society) to C (new society=high-wage society), since the standard of wages has been rising. In any event, we must note that the development mechanism of agriculture varies according to the natural and social environments.

The variation of the development mechanism of agriculture can be easily seen in an international comparison such as these. However, even within Japanese agriculture which is categorized as agriculture of a traditional society in a wet area, there is significant deviation among different regions. In this case, the separating out of variables determining the deviation in natural and social environments is in itself an important task and the second responsibility of rural studies dealing with regional agro-socioeconomic studies. By doing this, we will be able to clarify the peculiarities of agriculture of a region, assess the strengths and weaknesses of it objectively, and provide a basis for studying the development of agriculture.

#### **4. Paradigm Shift in Development Scheme: Fordism Type vs. Nichism Type of Development**

Unlike the manufacturing industry, agriculture, forestry and fishery have a strong local character because they are directly influenced not only by the socioeconomic environment but also by the natural environment. Production systems in these industries are difficult to change in a short period of time, and therefore they cannot swiftly cope with changes in the market. In fact, Japanese agriculture has faced fierce competition from imported farm products since imports were liberalized.

Every region has its mainstay agriculture featuring its locality. The technology and know-how that farm households in the region have acquired in regard to the mainstay agriculture are very important resources for the region. Since the mainstay agriculture has been established by dint of years of accumulation, no region can be vitalized if it is weak. The mainstay agriculture is, though often inconspicuous, the most important and basic production system for the region. Therefore, the most important step for the development of regional agriculture is to foster sustainable development of the mainstay agriculture.

			<b>Market</b>		
			<i>Fordism Type (Indifferentiated Market for Mass Consumers)</i>	<i>Nichism Type (Differentiated Market for Specified Consumer)</i>	
<b>Production</b>	<i>Nichism Type (Diversified/Multiple-crops in Limited Production)</i>		<i>D</i>	<i>C</i>	<i>Dynamic Function</i>
	<i>Fordism Type (Specialized/mono-culture in Mass Production)</i>	<b>High Added Value Commodity</b>	<i>A2</i>	<i>B2</i>	
		<b>Ordinary Commodity</b>	<i>A1</i>	<i>B1</i>	<i>Potential Function</i>
			<b>Potential Function</b>	<b>Dynamic Function</b>	

**Figure 3.** Hypothetical Framework of Production-Market Linkages

Source: Kawamura, Yoshio, (1998). “Rural Revitalization and Role of Local Governments” in Tsuneo Koike (ed.)

Japanese Agricultural Development and Roles of Local Governments, Tokyo: Ienohikari-kyokai, p.173

In the history of the modernization of agriculture, the development of the mainstay agriculture has been considered, in much the same manner as in other industries, in terms of Fordism type of production systems. The word “Fordism” originates from Henry Ford, the American automobile king, who established the mass production system by division of labor. The essence of Fordism is economy of scale or mass production of a small variety of goods, which in agriculture takes the form of “monoculture, large-scale holding, mechanization, higher labor productivity, cost reduction, and survival in price competition”.

We have to note that this kind of production system is predicated on the Fordism type indifferent market (Figure 3: A<sub>1</sub>-A<sub>2</sub>) that caters for mass-consumers. In this type of market, there is fierce competition between domestic and imported agricultural products. If we are to acquire added value and survive in this type of market, we must either reduce costs and prices by enlarging scale (Figure 3: A<sub>1</sub>) or develop new breeds and charge higher prices (Figure 3: A<sub>2</sub>). However, it is difficult and risky for a large-scale production system to transform itself to swiftly cope with changes in the market.

In contrast, if goods are targeted at relatively small-scale differentiated markets of differentiated consumers, they will generate added value and have development functions (Figure 3: A<sub>1</sub>→B<sub>1</sub>, A<sub>2</sub>→B<sub>2</sub>). This type of market is called a nichism type market. As economic terms, the phrases “niche market” and “niche industry” are often



used to indicate that the market or industry is intended for a small gap that has been neglected. We shall here define nichism as a system that intends to exert its capabilities in a small-scale market in ways best suited to the environment. Generally, farmers who are engaged in large-scale monoculture find a nichism type market too small and treat it only as a complement to the main market. However, a small number of agricultural cooperatives with large-scale holdings have acquired nichism type markets of considerable scale by tying up with consumer cooperatives in urban areas in the case of Japan.

It is very important to recognize that Japanese Fordism type production is objectively small scale operation at global standard, for instance compared with American production. Furthermore, Fordism type production is only possible in limited areas in the case of Japan where 75 % of total land are mountains. Thus the absolute major part of Japanese agriculture is operated under the small-lot-sized production. Therefore the nichism type production, which exerts its capabilities in a small-scale market in ways best suited to the environment, is inevitable in Japan in order to survive in globalizing economy. Multi-product, small-lot-sized production (nichism type production) is fit for nichism type markets (Figure 3: C). Organic farming involving cooperation between farmer and consumer as mentioned earlier is an example of this. In the U.S., organic farming and cultivation of ethnic foods are connected with Farmers Markets. Nichism may well be effective in agriculture, which is an essentially local economic activity, and especially in regions with unfavorable conditions such as mountain areas.

Introduction of nichism systems means diversification of regional agriculture. Some of the farm products that local governments have designated as promotion crops in Japan need marginal or peripheral forms of agricultural operations different from that of the mainstay. Nichism type agriculture is a new business. Diversification of regional agriculture makes it possible for farmers including women and aged persons to take part in the peripheral agriculture and this diversifies economic risks.

When the mainstay agriculture and the peripheral agriculture are complementary to each other such as agronomy and animal husbandry, they may be linked together and integrated on a regional level. We shall call such organic and horizontal integration of different types of agricultural operations “regional integrated agriculture.” Regional integration will lead to cost reduction in agricultural management and contribute to its stabilization. In addition, it will contribute to environmental conservation by assimilating the ecosystem into the regional agricultural management system and sustain its development.

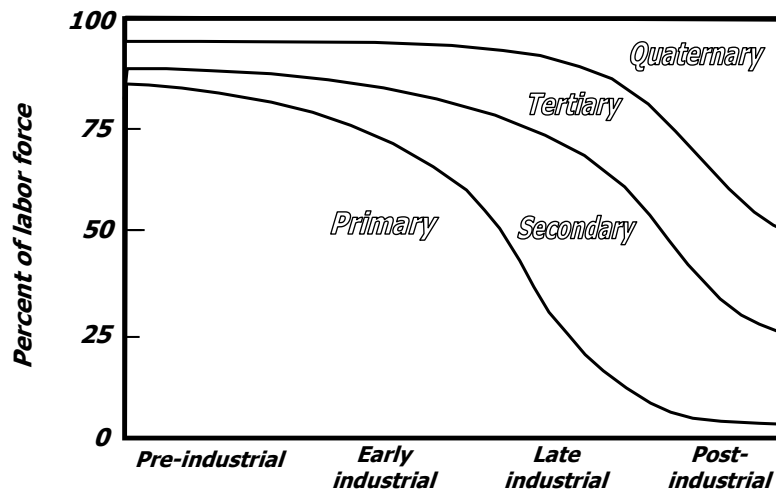


Figure 4. Change of Industrial Structure in Economic Development

Source: Berry *et al.*, (1976). *The Geography of Economic System*, Englewood Cliffs, N.J.: Prentice-Hall, p.24.

How to form channels from production to market is important to agriculture of either (nichism or Fordism) type of production. Since agriculture is directly influenced by the natural environment, it is difficult to transform the system of production swiftly in response to changes in the market. Such gaps between production and market can be bridged by food processing. Food processing may be classified as a secondary industry, but because of its closeness to agriculture (primary industry) it can be called a semi-secondary industry. Food processing responding to market needs is especially effective. Food processing can convert mass-produced products of Fordism type agriculture into small-lot-sized multiple products. In this sense, food processing is very important to agriculture. What is to be processed to meet market needs is not limited to goods, but can include services such as education and tourism, which are ordinarily classified as tertiary industries. We shall call such integration of agriculture with secondary and tertiary industries “integrated agri-business.”

Especially in regions with unfavorable conditions, where nichism may be only choice for local development, new possibilities for regional development will be found in the strengthening of direct access linkages between agricultural production and market and in the promotion of the secondary and tertiary industries related to agriculture. This may be the third field of rural studies’ responsibility of which are aiming not only intra- and inter-relations of rural communities but also rural-urban linkages in the society.

## 5. Conclusion: Roles of Rural Studies for Alternative Development in Globalizing Era

Globalizing economy based on high-tech information development is not solely an external change in international environments for the local community but directly associated with a internal change of the domestic society. As shown in Figure 4, most of the developed countries have become post-industrial societies, in which the tertiary industries are predominant. It is possible to understand that this social transition occurred in the late 1960s or early 1970s in the United States and in the late 1970s or early 1980s in the case of Japan. This shift has been eventually leading to the expansion of the quaternary industries, which refer to the portion of tertiary industries that is related to research and development. It is important to recognize that the quaternary industries are the driving force of the development of a society in the age of globalization.

This shift indicates that, in a post-industrial society, every industry has to become knowledge intensive. What is necessary is a direct linkage between the quaternary industry and the other three industries for constructing a network of knowledge intensive primary, secondary, and tertiary industries. Therefore, there is an urgent need to build up a support system that cultivates regional or local community capable of functioning in a knowledge intensive society. Rural communities today are in such a critical state that the development of the support system has passed the stage of consideration and reached the stage of implementing specific action programs. This is a fundamental reason of why we should recognize the social responsibility of rural studies for societal development in the globalizing era.

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